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REPORT

ON THE

HEALTH OF THE BOROUGH

OF

BIRMINGHAM,

FOR THE YEAR 1882,

ALSO,

ON THE PROCEEDINGS TAKEN UNDER THE ACT FOR THE

PREVENTION OF ADULTERATION

OF ARTICLES OF FOOD AND DRINK,

BY

ALFRED HILL, M.D., F.I.C.,

Medical Officer of Health,

and

Analyst to the Borough.

PRINTED BY ORDER OF THE HEALTH COMMITTEE

BIRMINGHAM:

GEORGE JONES AND SON, TOWN HALL PRINTING OFFICES, CONGREVE STREET.

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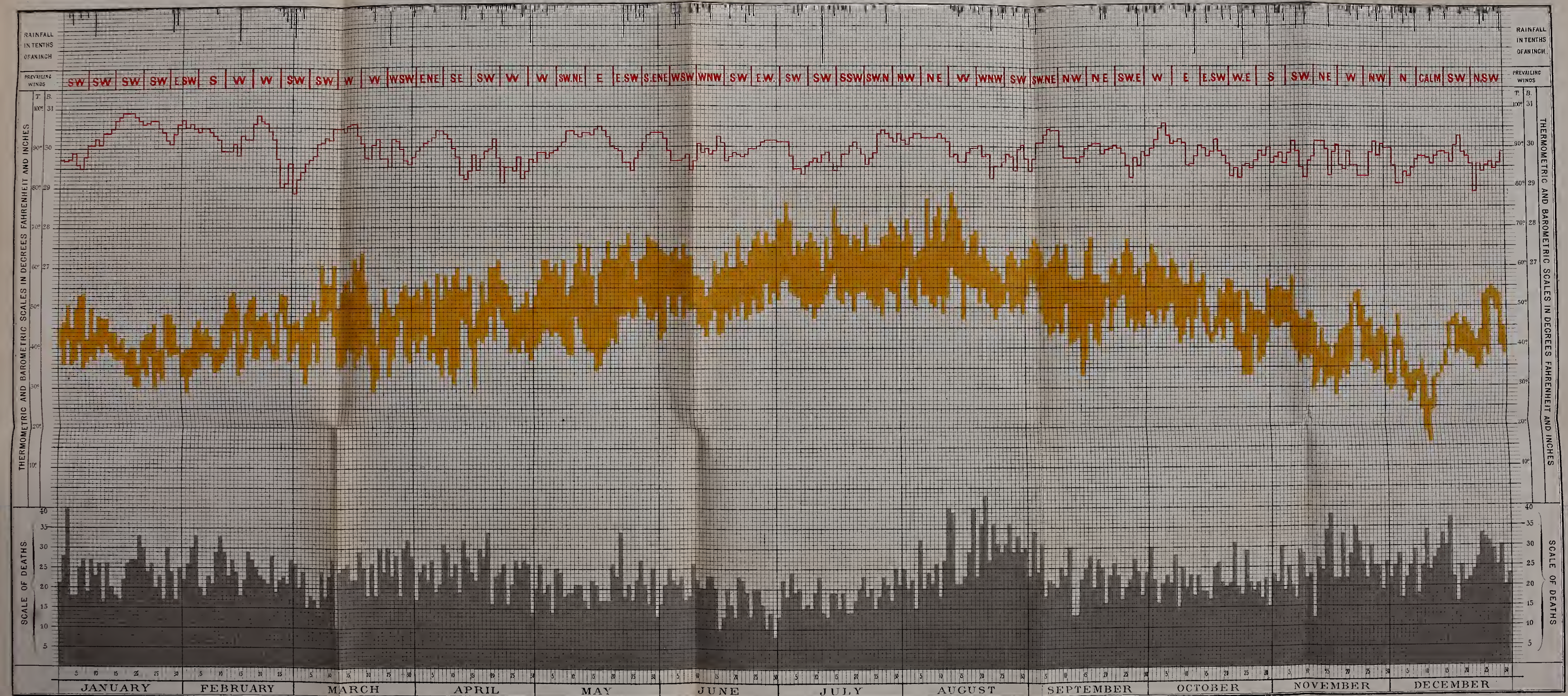
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Borough of Birmingham.

Chart illustrating the relations of the number of deaths to the principal meteorological conditions on each day of the year 1882.



MORTALITY: — Deaths METEOROLOGY: — Temperature (maximum and minimum) — Barometric pressure (corrected and reduced to 32° Fahrenheit and sea level) — Rainfall.



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HEALTH DEPARTMENT,

THE COUNCIL HOUSE,

Birmingham, April 28th, 1883.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I have the honour to submit my Tenth Annual Report on the Health of the Borough, and the pleasure of being able to congratulate you on the fact that the sanitary condition of the town in the year 1882, maintains within a fractional variation the highest position which it has occupied during the whole of the preceding decade. This variation, as measured by the Death-rate, is 0·9 per thousand of the population in excess of that of the preceding year, and only 0·1 per thousand in excess of that of the year 1880.

Introductory
Remarks.

A reference to the mortality of the earlier years of the decade will show that in 1873, when I entered upon my duties as Medical Officer of Health, the Death-rate was 24·8 per thousand, or 4·2 higher than in 1882, in the year 1874 the Death-rate was 26·8, or 6·2 per thousand higher, and in the following year, 1875, it declined only to 26·3, still being 5·7 higher; after further declining in 1876 to 22·4, it began to rise, and in 1877 stood at 23·9, or 3·3 per thousand higher than in 1882, and again attained its highest point in the following year, 1878, or a Death-rate of 25·2, and 4·6 per thousand higher; for the next three years is seen what has never occurred before during the period over which the sanitary records of the Borough extend, that is from 1865 to the present time, viz:—a progressive and very marked decline of the Death-rate during three successive years, 1879, 1880, and 1881, when the Death-rate was only 21·8, 20·5, and 19·7 respectively. In the year 1882 there has been, as mentioned, a fractional rise of the Death-rate, making it 20·6 per thousand of the population.

Sanitary
progress during
the past decade.

This slight increase in the mortality becomes, on examination, a much less important event than it would at first sight appear, indeed, after such examination, it supplies good ground for satisfaction. Let us see what this ground is. In each of the years 1874, 1878, and 1882, there arrived at its fullest development an epidemic of Scarlet Fever, a disease which is found to recur with more or less regularity every four years,

Sanitary
progress during
the past decade
continued.

and in 1874 there was also an epidemic of Small Pox conjoined with it; these diseases are of the preventable class, and although the difficulties of practically preventing them are enormous, we find that in these periods of recurrence the severity of each successive visitation has been less than that of its predecessor. Seeing then that the year 1882 was the culminating year of the last scarlatinal epidemic period, and that while in the two preceding culminating years the Death-rate was increased respectively 3·7 and 2·8 per thousand, while in 1882 it was raised only 0·9 per thousand, it would appear that the preventive measures, employed more fully than formerly, are gradually producing good fruit. Among such measures may be more especially mentioned the very full and efficient vaccination of children in the Parish of Birmingham by which Small Pox is prevented getting a firm foothold, and the greater use made of the Borough Hospital for the isolation of cases of Scarlatina and Small Pox.

Such a result of ten years sanitation seems to clearly establish the value of preventive medicine, and enables some idea to be formed of the enormous advantage to be gained by the development of a branch of medical science, which at present is only in its infancy, as far as its application goes, and is under the disadvantage of having to contend with incomplete legislation, prejudice, ignorance, and other retarding influences.

Surely the future, with advancing education and juster views of individual and social duty, may be reasonably expected to present a prospect of still greater sanitary advancement.

I. VITAL STATISTICS.

Population.

The population of the Borough was estimated to be at the middle of the year 1882, 408,532, or 6,236 more than at the corresponding period of the previous year.

Natural
increase.

Disregarding the migration to and from the town, the natural increase of population, *i.e.*, the excess of Births over Deaths, was 6,389, equivalent to 1·6 per cent., against a percentage of 1·8 in 1881, and 1·7 in 1880.

This small decline in the natural increase arises from the two causes of a slightly higher Death-rate and a very slightly lower Birth-rate.

Area.

The area of the Borough has undergone no change, it stands at 8,400 acres; as a natural consequence the density of the population has slightly increased; it is now 48·6 persons per acre, in 1873 it was 42·4, last year it was 47·9.

Density.

In the subjoined statement is given the estimated population, the density and the Death-rate from all causes in some of the principal British towns during 1882 :—

Comparative statement of Death-rate, &c., in certain large towns.

Population, Density, and Death-rate of certain Towns.	Estimated Population 1882.	No. of Persons per Acre.	Death-rate.
London	3,893,272	51·6	21·4
Liverpool	560,377	107·6	26·5
Birmingham ...	408,532	48·6	20·6
Manchester	340,211	79·2	26·7
Sheffield	290,516	14·8	21·7
Leeds	315,998	14·6	23·2
Salford	184,004	35·6	23·2
Newcastle-on-Tyne...	147,646	27·5	23·1
Norwich	88,211	11·9	20·6
Bristol	210,134	47·2	19·2
Glasgow	514,048	85·2	25·4
Dublin	348,293	34·7	27·9

The elevation of the Borough, or its height above the mean level of the sea, ranges between 310 feet at its lowest point, Nechells, and 600 feet at its highest point, at the top of the Hagley Road.

Elevation.

The Borough occupies an advantageous position on the upper division of the Bunter, or Mottled Beds of the Trias or Upper New Red Sandstone; the advantages are porosity and dryness of soil, and they are enhanced by the undulating and varied nature of the surface. Small quantities of clay only are found scattered here and there, but not in sufficient quantity to interfere with the porosity of the soil, except on the eastern side of the Borough, where the soil is constituted of clay to a considerable extent.

Geological position.

MARRIAGES.

The number of marriages in the Borough last year was 3,581, as compared with 3,261 in the previous year, and is equivalent to a rate of 17·5 per 1,000 of the population, against 16·3 in 1880, and 16·2 per 1,000 in 1881.

Marriages in the Borough.

In the subjoined statement is given the number of marriages, and the marriage rate in the Borough of Birmingham during the past 10 years.

Marriage-rate.

MARRIAGES IN THE BOROUGH.

Year..	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882
No. of Marriages	3,637	3,514	3,606	3,736	3,683	3,245	3,046	3,215	3,261	3,581
Rate per 1,000 of the Population	20·4	19·4	20·1	20·1	19·5	16·7	15·7	16·3	16·2	17·5

Marriage-rate
continued.

A glance at the above statement discovers that the marriage-rate in the Parish of Birmingham shows a further increase upon the low rates of the past few years, and now stands at a higher figure than in any year since 1877. Such an increase is no doubt an evidence of increasing prosperity, and, indirectly, of a general improvement in trade.

BIRTHS.

Births.

The Births registered during last year amount to 14,866, and show a still further slight decrease upon the continuously declining numbers of the last five years. The diminution is all the more apparent when we take into calculation the increase of population during that period, and is therefore strikingly exhibited by the *Birth-rates*, which have steadily fallen from 42·53 in 1876, to 36·39 for the year in question, a reduction of more than 14 per cent. It is noticeable, however, that the decrease in the rate last year on that of the previous year is but fractional, and considerably smaller than that of any year since the decline set in. This low Birth-rate is not peculiar to Birmingham, but is co-incident with an unusually low rate all over the country, the rate for England and Wales, according to the Registrar General, having receded last year to 33·7, a lower point than in any year since 1858, when the same rate prevailed. As, however, the Marriage-rate, which has fallen during recent years to a lower level than it had previously reached since the establishment of civil registration in 1837, has commenced to rise again, it is only reasonable to anticipate that the Birth-rate will also follow in the track of the Marriage-rate, and shortly commence to move in the opposite direction to that it has for so long taken.

Birth-rate.

Birth-rate of
England and
Wales.

A comparison of the number of Births, and of the Birth-rates for each quarter since the first of 1873 is appended:—

	1873.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.	Birth-rate.
Total	...	3,741	3,564	3,378	3,814	14,497	40·78
Males	...	1,892	1,783	1,715	1,950	7,340	
Females	...	1,849	1,781	1,663	1,864	7,157	
1874.							
Total	...	3,814	3,871	3,493	3,710	14,888	41·25
Males	...	1,953	1,961	1,753	1,853	7,520	
Females	...	1,861	1,910	1,740	1,857	7,368	
1875.							
Total	...	3,787	3,737	3,581	3,757	14,862	40·57
Males	...	1,929	1,884	1,815	1,904	7,532	
Females	...	1,857	1,853	1,766	1,853	7,329	
Sexless	...	1	—	—	—	1	
1876.							
Total	...	4,140	3,924	3,803	3,949	15,816	42·53
Males	...	2,045	1,996	1,959	2,028	8,028	
Females	...	2,095	1,928	1,844	1,921	7,788	

							Birth-rate <i>continued.</i>
1877.							
Total	... 4,296	4,009	3,769	3,927	16,001	42·39	
Males	... 2,139	2,015	1,878	2,037	8,069		
Females	... 2,157	1,994	1,891	1,890	7,932		
1878.							
Total	... 4,139	4,096	3,849	3,880	15,964	41·67	
Males	... 2,160	2,051	1,962	1,982	8,155		
Females	... 1,979	2,045	1,887	1,898	7,809		
1879.							
Total	... 4,124	3,912	3,723	4,087	15,846	39·98	
Males	... 2,086	1,992	1,878	2,096	8,052		
Females	... 2,038	1,920	1,845	1,991	7,794		
1880.							
Total	... 3,964	4,104	3,572	3,471	15,111	38·28	
Males	... 2,023	2,100	1,762	1,802	7,687		
Females	... 1,941	2,004	1,810	1,669	7,424		
1881.							
Total	... 3,965	3,754	3,560	3,590	14,869	36·96	
Males	... 1,991	1,893	1,804	1,822	7,510		
Females	... 1,974	1,861	1,756	1,768	7,359		
1882.							
Total	... 3,968	3,760	3,478	3,660	14,866	36·39	
Males	... 2,010	1,922	1,784	1,903	7,619		
Females	... 1,958	1,836	1,694	1,757	7,247		

The rates in the principal large English towns during last year were as under :—

Average of 28 large Towns.	London	L'pool.	Birm.	Manch.	Leeds	Sheffield	Salford	N'castle.	Norw'	Towns compared.
35·3	34·3	36·7	36·4	36·7	36·1	37·4	38·9	37·2	33·9	

VACCINATION.

The returns supplied me for the year ended June 30th 1882, for which I have to thank Messrs. Rust, Stephens, and Johnson, Vaccination Officers of the Parishes of Birmingham, Aston, and Edgbaston, respectively, show that of 9,214 Births registered in the Parish of Birmingham during that period, 8,187 or 88·9 per cent. were successfully vaccinated, 845 or 9·2 per cent. died before vaccination could be performed, and 91 or 1·0 per cent. had been removed to other localities without the cognizance of the Vaccination Officer. The other children not accounted for in this Parish were either insusceptible of vaccination, or their vaccination had been deferred on medical grounds, or they had been taken to other districts the Vaccination Officers of which had been duly informed of the fact.

In that portion of the Borough within the Parish of Aston, the Births of 5,436 children were registered in the same period of time. Of these, 4,446 or 81·8 per cent. were vaccinated with success, 347, or the large per centage of 6·2, had been lost sight of, or had never been found, largely owing no doubt to incorrect addresses having been given, wilfully or otherwise, to the Registrars at the time of registration, in order to escape compulsory vaccination; 505, or 9·3 per cent., died

Vaccination in
the Parish of
Birmingham.

In Aston
Parish.

unvaccinated, and 77 others remained altogether unaccounted for at the end of the period. Nearly the whole of the few children remaining were not sufficiently healthy to undergo the operation.

In Edgbaston Parish.

In the Borough portion of the Edgbaston Parish, the Vaccination Officer received notice of the registration of Birth in 727 instances; 626 of the infants, or 86·1 per cent. were successfully vaccinated, 53 others, or 7·3 per cent., died before being vaccinated, and 26, or 3·6 per cent., were removed from the Parish, and remained untraced at the end of the year.

The returns furnished me are copies of those supplied to the Local Government Board, and cannot be made up to the close of last year in time for this report, owing to the impossibility of accounting for the vaccination of children till they are at least three months old. The facts are better appreciated when stated in percentages in a tabular form, as follows:—

Table of comparison.

PARISH.	Year.	Vaccinated.	Died before Vaccination.	Removed from District and not found.	Unfit, insusceptible, or otherwise.
Birmingham	1880	86·2	9·7	3·0	1·1
	1881	87·3	9·6	1·7	1·4
	1882	88·9	9·2	1·0	0·9
Aston	1880	81·3	9·3	6·4	3·0
	1881	83·2	10·3	5·5	1·0
	1882	81·8	9·3	6·4	2·5
Edgbaston	1880	82·6	8·2	1·8	7·4
	1881	81·3	8·2	3·2	7·3
	1882	86·1	7·3	3·6	3·0

It is very satisfactory to find that Vaccination is so thoroughly carried out in the Parish of Birmingham, by which great credit is reflected upon both the Guardians and their Officers for the interest and efficiency displayed in the very important preventive function of primary Vaccination. It is, on the other hand, much to be regretted that the same degree of completeness is not found in the Parish of Aston, which constitutes a weak point in the defensive sanitary armour of the town, through which the enemy may at any time enter and inflict serious mischief, not only on the unvaccinated, but also on the imperfectly vaccinated and only partially protected members of the community.

DEATHS.

The Deaths registered during 1882 amounted to 8,425, Deaths. against 7,938 in 1881, and 8,808, the average number in the ten years 1872-1881. The mortality is somewhat higher than last year, but it is as remarkable as gratifying to find that it is not only relatively, but absolutely less than the average mortality of the decade 1872-1881, when the population was much smaller. There is thus again a large saving of life compared with past Saving of life. years; a saving which, compared with the year 1865, supposing the population to be the same then as now, amounts to 1,583 lives in the year 1882; the value of this saving would be seen to be still greater if it were possible to estimate the influence of the increased density of the population resulting from its continual growth.

The Death-rate for 1882 is 20·62 per thousand of the Death-rate. population, or 0·89 higher than the rate for the previous year, which was the lowest on record. The Death-rate was 3·23 per 1,000 less than the average Death-rate in the preceding seventeen years, which is equivalent to saying that, of 48·5 persons living, one died during the year, a rate of mortality nearly identical with that obtained in 1880, but slightly higher than last year. If the Death-rate of the last five years be compared with that of the first five years of the decade just completed, a marked decrease will be found; in the first quinquennial period the average Death-rate was 24·8, while in the last quinquennium it was only 21·6, a difference of 3·2 per 1,000. If this rate be compared with that of the twenty large English towns, it will be found that we stand third on the list, and equal with Norwich; Bristol holding the first place with a Death-rate of 19·2, and Manchester the last with a rate of 26·8 per 1,000.

The fractional rise in the Death-rate above that in 1881, Causes of increased Death-rate. is no doubt attributable to the considerable increase of the fatality of the Zymotics, Scarlet Fever and Diarrhoea; of the Constitutional diseases, Consumption of the Lungs and the Bowels; and of the Developmental class of diseases generally, but particularly those incident to Child birth, Premature birth, and Debility in young children.

The Registrar General's death returns do not exactly agree with mine, as he includes the deaths of paupers belonging to that portion of the Parish of Aston situated in the Borough of Birmingham and the Parish of Edgbaston, who die in the Erdington and King's Norton Workhouses respectively. As, however, the number of persons, who come into the Borough Institutions, and die there, is doubtless considerably greater than of those who leave the Borough and die in the Workhouses outside its boundaries, it is manifestly unfair to make an allowance which affects only the one side of the question. Discrepancy between Registrar General's and own figures.

The Death-rate of the several Institutions, exclusive of the Mortality in Institutions. Workhouse, is 1·3; while inclusive of that Institution it is 2·7 per 1,000 of the population of the Borough.

The subjoined statement contains an estimate of the population, the density of population, the total numbers of Births and Deaths, and the Birth-and Death-rates for each year since 1864:—

Year.	Population Estimated in the middle of each year.	Density. Persons per acre.	Births.	Deaths.	Annual Rate per 1,000 living.			
					Births.	Deaths.		
1865	The Estimate of Population in these years is not to be relied on.	—	12,699	8,014	38·9	24·5		
1866		—	12,877	8,042	38·5	24·0		
1867		—	13,029	8,318	38·0	25·6		
1868		—	12,992	8,548	36·3	25·9		
1869		—	12,779	7,737	35·5	23·1		
1870		—	12,922	7,805	35·0	23·0		
1871	...	344,980	...	41·1	13,443	8,594	39·0	24·9
1872	...	350,164	...	41·7	14,123	8,048	40·5	23·1
1873	...	355,540	...	42·4	14,497	8,990	40·8	24·8
1874	...	360,892	...	43·0	14,888	9,665	41·2	26·8
1875	...	366,325	...	43·6	14,862	9,668	40·6	26·3
1876	...	371,839	...	44·3	15,816	8,330	42·5	22·4
1877	...	377,436	...	44·9	16,001	9,038	42·4	23·9
1878	...	383,117	...	45·6	15,964	9,662	41·7	25·2
1879	...	388,884	...	46·3	15,846	8,650	40·0	21·8
1880	...	394,738	...	47·0	15,111	8,088	38·3	20·5
1881	...	402,296	...	47·9	14,869	7,938	37·0	19·7
1882	...	408,532	...	48·6	14,866	8,425	36·4	20·6

Comparative
Death-rate of
Birmingham
and large towns

A comparison of the Death-rates of Birmingham and other large towns during the last ten years is given in the following statement:—

DEATH-RATE PER 1,000 PERSONS LIVING.

Average of 20 large English Towns.	London	L'pool	BIRM.	Manch.	Leeds.	Sheff'd	Salford	N'castle	Norw'h	Bristol.
1882... 22·6...	21·4	26·5	20·6	26·8	23·2	21·7	23·2	23·1	20·6	19·2
1881... 21·7...	21·2	26·7	19·7	25·5	21·6	21·1	22·6	21·8	19·5	19·6
1880... 22·6...	22·2	27·3	20·5	25·4	21·0	21·1	25·9	22·0	24·7	20·1
1879... 23·2...	23·3	27·1	21·8	26·9	22·6	21·3	24·9	23·6	22·0	21·1
1878... 24·4...	23·5	29·4	25·2	27·9	23·8	25·0	25·6	23·8	24·6	21·4
1877... 22·8...	21·9	26·5	23·9	27·4	22·3	21·9	25·1	22·4	21·0	21·8
1876... 23·6...	22·3	27·6	22·4	29·2	25·1	24·3	31·9	22·8	21·9	22·6
1875... 25·4...	23·7	27·5	26·3	29·9	26·4	24·8	31·5	26·1	24·5	26·8
1874... 25·4...	22·5	32·0	26·8	30·4	28·7	26·9	29·6	29·2	23·5	22·7
1873... 24·4...	22·5	25·9	24·8	30·1	27·6	25·8	29·3	30·1	21·5	23·1

The number of Deaths, distinguishing sex, and the Death-rate for each quarter of the year, as well as the totals for the year and the four preceding years, are given below:—

			1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1882.	Total 1881.	Total 1880.	Total 1879.	Total 1878
Total	...	...	2,160	1,950	2,112	2,203	8,425	7,938	8,088	8,650	9,662
Males	...	...	1,096	1,005	1,072	1,164	4,337	4,049	4,230	4,500	5,086
Females	...	...	1,064	945	1,040	1,039	4,088	3,889	3,858	4,150	4,574
Sex not known	...	...	—	—	—	—	—	—	—	—	2
Death-rate	...	...	21·15	19·09	20·68	21·57	20·62	19·73	20·49	21·82	25·20

The distribution of the deaths among the eight Registration Sub-Districts during the past four years, and the Death-rate of each Sub-District during 1882, are given in the annexed Table:—

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total Deaths 1882.	Total Deaths 1881.	Total Deaths 1880.	Total Deaths 1879.	Death Rate 1882.
Ladywood ...	236	206	254	275	971	907	892	1,026	18·1
St. Thomas ...	205	199	217	197	818	783	809	887	21·1
St. Martin ...	200	198	219	246	863	761	870	868	20·8
St. George ...	412	356	391	408	1,567	1,525	1,453	1,649	24·3
All Saints' ...	403	376	339	383	1,501	1,436	1,359	1,484	29·2
Deritend ...	332	299	340	344	1,365	1,312	1,443	1,394	16·8
Duddeston ...	264	261	239	286	1,100	988	1,024	1,071	19·1
Edgbaston ...	58	55	63	64	240	226	238	271	10·1

A comparison of the figures for the years 1881 and 1882 shows that the number of deaths has risen in each Registration Sub-District. The rise has been proportionately greatest, however, in the Sub-Districts of St. Martin and Duddeston, amounting in the first-named District to 13 per cent.

In comparing the Death-rates of the several Registration Sub-Districts allowance should be made in several of the Districts for the occurrence in them of deaths in Public Institutions situated within their area.

As the persons who die in these Institutions come from every district in the neighbourhood, it is manifestly unfair, for purposes of comparison, to debit the district in which such an Institution or Institutions may be placed with all such deaths. It is impossible, however, to obtain the information necessary to allocate the deaths registered in these Institutions, and belonging to the Borough, to the districts in which they would have occurred, if they had not been removed from their homes, and there is consequently no alternative but to eliminate all such deaths from the calculations necessary for comparing the total Death-rate of one district with another. Thus, by disregarding the deaths in the Children's Hospital, the Death-rate of Ladywood Sub-District is brought down from 18·1 to 17·2, and by similarly treating the deaths in the Queen's and General Hospitals the Death-rates of St. Thomas's and St. George's Sub-Districts stand respectively at 17·9 and 20·5, instead of at 21·1 and 24·3, if no such allowance be made.

Causes of
Death-rates
appearing too
high in certain
Sub-Districts.

On reference to the preceding Table, it will be noticed that the Death-rate of All Saints' Sub-District is made to appear unusually great. This high figure depends on the circumstance that the Workhouse, Asylum, Borough Hospital and Gaol are all situated within the confines of this Sub-District. If the Deaths in these Institutions be subtracted, the Death-rate is reduced from 29·2 to only 16·4.

Distribution of
Deaths among
the Wards.

The number of Deaths in each of the sixteen Wards of the Borough, for each quarter of the year, and for the whole year, is stated below :—

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total.
Rotton Park (W., B.H.) ...	276	274	246	297	1,093
All Saints' (L.) ...	171	130	149	137	587
Ladywood (H.) ...	112	110	129	155	506
St. Paul ...	107	82	88	90	367
St. George ...	145	117	123	156	541
St. Stephen ...	110	98	115	95	418
St. Mary (H.) ...	159	166	180	179	684
St. Bartholomew ...	165	134	149	160	608
Market Hall ...	78	76	71	55	280
St. Thomas (H.) ...	145	136	149	141	571
St. Martin ...	81	90	112	118	401
Edgbaston ...	68	68	78	84	298
Deritend ...	148	113	35	119	515
Bordesley ...	159	139	40	166	604
Duddeston ...	114	97	118	113	442
Nechells ...	122	120	130	138	510

Ward Popula-
tion.

The population of each Ward being unknown, their Death-rates cannot be ascertained, and therefore for purposes of comparison of Death-rates and sanitary condition, these figures possess little value.

Distribution of
Deaths among
the ætal periods.

The Deaths have been distributed among certain ætal periods during this and the two previous years, as follows :—

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1882.	Total 1881.	Total 1880.
Under 1 year of age ...	568	524	811	549	2,452	2,212	2,601
Between 1 and 5 years ...	445	331	344	407	1,527	1,429	1,442
" 5 " 20 " ...	156	129	145	166	596	495	488
" 20 " 40 " ...	233	268	221	306	1,028	978	925
" 40 " 60 " ...	373	334	281	375	1,363	1,319	1,235
At 60 years and upwards ...	385	364	310	400	1,459	1,506	1,397

It is thus seen that the number of Deaths is this year higher than last year at each of the ætal periods, except at that above 60 years of age, at which period of life the number of deaths has decreased. The increase among the other ætal periods is fairly equally divided; the larger mortality among children is mainly attributable to the considerable fatality of Infantile Diarrhoea during the past autumn, in contrast with the slight mortality from this disease in the previous year.

Average age at
Death.

The average Age at Death for each quarter of the past two years, is shown below :—

1882.				1881.			
First Quarter—25 years and 10 months.				31 years and 2 months.			
Second " 32 " 2 "				27 " 8 "			
Third " 21 " 4 "				22 " 11 "			
Fourth " 26 " 8 "				24 " 4 "			
Whole year 26 " 5 "				26 " 7 "			

The average Death-Age has fluctuated considerably from quarter to quarter, but for the whole year it differs but little from that of 1881. Average age at death.

The weekly variations of the Death-age, and the Death-rate, are shown in a Chart at the end of the Report.

INFANT MORTALITY.

The Deaths of Infants under one year of age numbered last year, 2,452, and represented an annual rate of 16·5 per cent. of the registered Births; this rate, though lower than the average percentage in Birmingham during the past nine years, is higher than that of 1881, by 1·5, and than that of England and Wales, by 2·4. Infant mortality.

The percentage of infant mortality on the Births registered in Birmingham and the principal large English towns during the last ten years is given in the subjoined Table :— Percentage of Deaths on Births.

Average of 20 large English Towns.											
London.	L'pool.	BIRM.	Manch.	Leeds	Sheff'ld	Salford	N'castle	Norw'h	Bristol		
1882...	16'1...	15'1	17'8	16'5	17'9	18'0	16'5	17'8	16'6	16'9	14'2
1881...	15'2...	14'8	17'3	15'0	16'1	16'7	15'5	16'3	15'3	14'7	12'5
1880...	17'0...	15'8	19'1	17'2	18'0	17'4	16'5	20'0	17'1	21'6	14'6
1879...	15'1...	14'8	16'3	15'0	16'5	16'1	15'3	17'0	14'5	15'9	14'5
1878...	17'2...	16'4	19'3	17'0	17'5	18'8	17'6	18'5	16'1	21'1	16'0
1877...	15'4...	14'6	18'8	16'4	16'1	16'5	16'1	16'1	15'1	15'4	15'4
1876...	16'7...	15'7	20'8	16'0	18'0	18'1	16'9	18'9	16'7	17'8	15'3
1875...	17'6...	16'2	21'0	19'6	18'4	19'7	17'6	17'8	18'7	21'0	16'6
1874...	17'5...	15'6	23'3	17'8	19'7	19'9	18'8	18'9	19'8	17'8	15'3
1873...	17'4...	16'0	21'3	18'1	20'0	19'4	18'0	18'5	18'7	16'1	15'7

The following is a statement of the percentage of Deaths under one year of age on the total deaths in the chief English towns during the ten years, 1873–82 :— Percentage of Deaths on total Deaths.

Average of 20 large English Towns.											
London	L'pool.	BIRM.	Manch.	Leeds	Sheff'd.	Salford	N'castle	Norw'h.	Bristol		
1882... 25·6...	24·3	24·5	29·1	24·6	27·8	28·4	24·0	26·9	27·7	24·4	
1881... 24·9...	24·1	24·4	27·7	23·3	28·5	27·9	27·9	25·8	25·5	22·0	
1880... 26·8...	25·7	26·7	32·1	24·0	29·4	27·5	29·3	28·0	30·0	24·0	
1879... 23·9...	23·2	23·3	27·5	22·4	26·3	25·6	27·3	22·6	24·7	24·7	
1878... 26·5...	25·2	25·5	28·6	24·0	31·0	26·5	30·5	25·8	28·7	26·4	
1877... 25·5...	24·1	27·5	29·1	22·6	29·7	25·5	27·1	26·6	24·7	25·4	
1876... 26·9...	25·7	29·6	30·5	24·5	29·9	28·6	29·2	30·4	27·0	25·5	
1875... 26·2...	24·4	29·4	30·6	24·3	30·1	29·2	26·7	29·1	28·0	22·6	
1874... 26·4...	24·9	28·2	27·8	25·4	28·8	29·2	28·2	27·5	24·0	24·5	
1873... 27·0...	25·2	30·4	29·2	25·7	28·0	29·7	27·2	27·1	24·5	24·9	

The increased rate of such infant mortality is due to greater destructiveness of Infantile Diarrhoea in the Summer quarter. Increase of Infant mortality.

The number of Deaths under 5 years of age was 3,979, as compared with 3,741, in 1881; the percentage on total Deaths is 47·2, against 47·1 in the previous year. Deaths under 5 years

In the following Table will be found particulars respecting Infant Mortality, and the Deaths and Death-rate from all causes, as well as from diseases of the Zymotic class at certain ages, during 1882 and the previous eight years :—

ANALYSIS OF THE MORTALITY IN THE BOROUGH OF BIRMINGHAM, IN EACH OF
THE TEN YEARS, 1873 TO 1882.

YEAR.	Deaths of Infants under 1 year.	Proportion of Deaths under 1 year to 1,000 Births.	DEATHS.				Annual Rate per 1,000 living.			
			AT ALL AGES.		FROM ALL CAUSES.		AT ALL AGES.		FROM ALL CAUSES.	
			From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.	From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.
1873	2627	181	8990	2042	4424	1521	24·8	5·6	12·4	4·3
1874	2688	178	9665	2652	4589	1459	26·8	7·3	12·7	4·4
1875	2957	196	9668	2145	4785	1590	26·3	5·9	13·0	4·3
1876	2537	160	8330	1336	3881	1441	22·4	3·6	10·4	3·9
1877	2628	164	9038	1576	4460	1521	23·9	4·2	11·8	4·0
1878	2766	170	9662	2421	5128	1506	25·2	6·3	13·4	4·0
1879	2385	150	8650	1254	4095	1686	21·8	3·2	10·5	4·3
1880	2601	172	8088	1324	4043	1397	20·5	3·4	10·2	3·5
1881	2212	150	7938	1128	3741	1506	19·7	2·8	9·3	3·7
Average 1873 to 1881	2600	187	8892	1764	4349	1514	23·5	4·7	11·5	4·0
1882	2452	165	8425	1412	3979	1459	20·6	3·4	9·8	3·7

Details of mortality.

Details of the mortality are given in Tables A and B, on pages 22 and 23.

SPECIFIED CAUSES OF DEATH.

Specified causes of Death.

During the year the Deaths were thus distributed among the five primary classes of disease :—

Class I.—Zymotic Diseases	...	1,711, or 20·3 per cent. of total mortality.		
Class II.—Constitutional Diseases	1,297, or 15·8		"	"
Class III.—Local	" 3,769, or 44·8		"	"
Class IV.—Developmental	" 1,280, or 15·2		"	"
Class V.—Violent Deaths	... 335, or 4·0		"	"

Not specified

Causes not specified ... 33, or 0·4

I.—ZYMOTIC DISEASES.

This group of diseases has caused 1,711 Deaths, against 1,407 in 1881. The rate of mortality from this class of disease was 4·2 per 1000 of the population, against 3·5 per 1000 in the year 1881.

THE SEVEN PRINCIPAL ZYMOTICS.

viz:—Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhœa, have resulted fatally in 1,412 instances, as compared with 1,128 in 1881, and 1,780, the average of the 10 years, 1872—1881, so that though there is an increase of mortality upon last year, there is a marked diminution on that of the previous decade. The Death-rate from these seven diseases was 3·4 per 1000 persons living; in the nine years 1873, 4, 5, 6, 7, 8, 9, 1880, and 1881, the rates were respectively 5·6, 7·3, 5·9, 3·6, 4·2, 6·3, 3·2, 3·4, and 2·8.

In the following table the Zymotic Death-rate of the Borough is compared with that of the principal English towns during the past ten years.

Average of 20 large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds	Sheff'd	Salford	N'castle	Norw'h	Bristol
1882 ... 3·9 ... 3·4	4·4	3·4	3·7	3·4	2·8	3·8	3·3	2·4	2·3	
1881 ... 3·4 ... 3·6	4·5	2·8	2·3	2·9	2·7	2·9	2·6	1·7	2·3	
1880 ... 4·0 ... 3·7	5·1	3·4	4·2	3·3	4·4	6·8	3·2	5·8	3·1	
1879 ... 3·2 ... 3·3	6·0	3·2	3·4	3·3	3·5	4·0	3·9	2·2	2·1	
1878 ... 4·4 ... 4·1	6·1	6·3	4·0	4·5	5·6	5·1	4·6	3·6	2·1	
1877 ... 3·5 ... 3·5	4·7	4·2	4·2	2·8	3·3	4·8	2·5	2·9	3·4	
1876 ... 4·1 ... 3·6	6·1	3·6	5·2	4·5	4·8	8·5	2·5	2·9	3·8	
1875 ... 4·4 ... 3·9	4·5	5·9	4·6	4·6	4·8	7·2	3·6	4·3	3·9	
1874 ... 4·5 ... 3·3	8·4	7·3	5·5	6·3	6·0	6·5	5·5	2·0	2·1	
1873 ... 3·9 ... 3·3	4·0	5·6	5·9	5·6	4·9	6·0	6·8	2·2	2·7	

The percentage of Zymotic Deaths on total Deaths in the same principal English towns for the last ten years may be found below:—

Average of 20 large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds	Sheff'd	Salford	N'castle	Norw'h	Bristol
1882 ... 16·1 ... 16·3	16·6	16·5	14·0	15·1	11·5	16·8	14·4	12·0	12·3	
1881 ... 15·5 ... 17·0	16·8	14·2	9·1	13·6	13·0	12·9	12·1	8·7	11·7	
1880 ... 17·7 ... 16·8	18·6	16·4	16·4	15·7	21·0	26·2	14·4	23·7	15·4	
1879 ... 13·8 ... 14·3	21·2	14·5	12·8	14·6	16·5	16·1	16·5	10·0	10·1	
1878 ... 18·2 ... 17·6	21·9	25·1	14·3	19·0	23·6	19·9	12·2	14·5	10·0	
1877 ... 15·4 ... 16·0	17·8	17·4	15·4	12·6	15·1	19·1	10·3	13·8	15·7	
1876 ... 17·3 ... 16·1	22·1	16·0	17·8	17·8	19·6	26·6	11·0	13·2	17·1	
1875 ... 17·5 ... 16·5	16·4	22·2	15·5	17·4	19·4	22·9	13·8	17·6	18·5	
1874 ... 18·0 ... 14·9	25·2	27·4	19·7	22·0	22·3	22·0	18·0	9·0	9·5	
1873 ... 16·3 ... 14·9	19·1	23·8	19·7	22·9	19·0	20·3	22·0	10·1	11·6	

DIARRHOEA

Diarrhoea, has been the most destructive to life of the chief Zymotics, having occasioned 534 Deaths, as compared with only 341 in the previous year, when the number was exceptionally low. The mortality last year was, however, still below the average of the last ten years, which was 601. The disease was more fatally prevalent in the Registration Sub-District of St. George than in other portions of the Borough.

At different ages. Sixty-seven per cent. of the Deaths from this cause occurred in infants under one year of age, and 90·6 per cent. in children under five years of age, so that only 9·4 per cent. of the Diarrhoea Deaths occurred in persons above 5 years of age.

Death-rate in the summer quarter. In the Summer quarter the Death-rate from this cause was 3·8, as compared with a rate of only 2·1 in the third quarter of the previous year, and 4·5 the average rate of the previous nine years.

General increase of Diarrhoeal Death-rate. The Diarrhoeal Death-rate has manifested an increase throughout the country generally; the rate for England and Wales during the Summer quarter was 1·5, against only 1·3 in 1881, and that for the 28 provincial towns 2·4, as compared with 2·2 in 1881, and 3·5, the average rate for the third quarters of the 10 years, 1872—81.

In the 28 large English towns the rate ranged between 0·9 in Halifax, and 6·0 in Preston.

In 50 other large English towns the average rate was 1·9.

Local Government Board's investigation of the causes of Autumnal Diarrhoea. The increased Diarrhoea Death-rate in 1882, and the fact that Birmingham suffers more from this complaint in the Summer quarter of the year than the majority of large towns, invest with much interest the scientific enquiry now being conducted by Dr. Ballard into its cause. The meteorological and other observations, with which this Department is assisting Dr. Ballard, are being unremittingly carried on and recorded, and will, it is to be hoped, result eventually in much light being thrown on the causation of the disease, and in practical measures for its mitigation.

SCARLET FEVER

Scarlet Fever. proved fatal in 256 instances, against only 123, or less than one half the number, in 1881. The mortality from this disease is pretty fairly scattered over the Borough, as shewn on the Map at the end of the Report.

Periodicity of Scarlet Fever epidemics. In my last Annual Report I drew attention to the fact that this Zymotic occurs in waves, each culminating period occurring between every four and five years. As we experienced the last of such periods in 1878, it was to be expected that a

maximum of mortality would again be attained in 1882, and particularly in the closing months of the year, when the mortality from this disease always shows an increase. Though it is true that the fatality of Scarlet Fever during 1882 is considerably higher than that of the previous year, still, if we actually have passed the crest of the present wave, we have reason for great congratulation upon the much less severity of the present epidemic than that of its two predecessors. In 1878, when Scarlet Fever was last conspicuously prevalent, the deaths from this cause numbered no fewer than 995, while in 1873 and 1874, the years of the previous epidemic, the Scarlatina deaths were respectively 587 and 737, or a total for the two years of 1,324.

Periodicity of
Scarlet Fever
epidemics,
continued.

The two previous epidemics reached their highest mortality in 1874 and 1878, and we may therefore regard 1882 as another culminating period; if we take each of these culminating years as the last of a series of four, we shall find that in the series ending with 1874 the Scarlatina deaths were 1,860, in the four years terminating with 1878, 1,701, and in the last four years, only 849.

It is not unreasonable to assume that the slight severity of the present epidemic, in comparison with that of the two last, is owing to the much greater use made of the Borough Hospital than formerly.

WHOOPING COUGH

has resulted fatally in 319 instances, against 362 in 1881, and 309 the average of the ten years 1872-1881. It has been most fatal in the Registration Sub-Districts of Saint Martin and Deritend.

Whooping
Cough.

The mortality from this disease continues high, and still exhibits no signs of any immediate great reduction in its fatality.

MEASLES

has been the next most destructive of the Zymotics, having occasioned 150 deaths; last year the deaths from this cause numbered 132, while the average number for the ten years 1872-1881 was 126. The Registration Sub-District of Saint Martin has had the greatest proportionate mortality from this Zymotic.

Measles.

The three forms of

FEVER

have this year proved fatal to 87 persons, against only 66 in 1881; 67 of the Fever deaths were certified as Typhoid, while the remaining 20 were set down to a simple continued form of Fever.

Fever.

				Per 1,000 per annum.							
				Birmingham.				20 large Towns.			
1870	...	...	...	·63	...	...	...	...	...	...	·90
1871	...	...	...	·53	...	...	...	...	...	...	·78
1872	...	...	...	·54	...	...	...	...	...	...	·60
1873	...	...	...	·57	...	...	...	...	...	...	·59
1874	...	...	...	·56	...	...	...	...	...	...	·58
1875	...	...	...	·56	...	...	...	...	...	...	·52
1876	...	...	...	·40	...	...	...	...	...	...	·45
1877	...	...	...	·38	...	...	...	...	...	...	·42
1878	...	...	...	·38	...	...	...	...	...	...	·42
1879	...	...	...	·22	...	...	...	...	...	...	·29
1880	...	...	...	·21	...	...	...	...	...	...	·30
1881	...	...	...	·16	...	...	...	...	...	...	·31
1882	...	...	...	·21	...	...	...	...	...	...	·36

It will be seen from the ^{preceding} following statement that although there has been a larger number of cases of Fever reported, and the death-rate from this special cause is therefore slightly raised, yet it still remains lower than in any year since 1870, except in the year before last, with which it is exactly equal, and that this death-rate is much lower than in the twenty large towns, while the actual diminution during the last thirteen years is greater in Birmingham than in those towns.

DIPHTHERIA

Diphtheria.

is this year credited with only 49 deaths, as compared with 57 in 1881, and 69 the average of the previous ten years. It is most satisfactory to be able to record that the deaths from this cause are this year lower than in any year which my statistics embrace, the rates since 1873 being as follows:—

Birmingham.										
1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	
·31	·21	·16	·16	·14	·22	·18	·13	·14	·12	
Twenty large Towns.										
·09	·16	·12	·09	·09	·13	·13	·12	·15	·17	

The decline in the number of cases of this preventable disease is also highly satisfactory; the death-rate from it is less than in any year since 1873, since when it has declined annually with more or less regularity from 0·31 per 1,000 of the population to 0·12, while during the same period it has risen in the twenty large towns from ·09 to ·17, thus the unenviable notoriety of Birmingham for the prevalence of this disease which it has so long had to regret has happily come to an end, and its position with regard to the twenty large towns has become reversed.

SMALL-POX.

Small-pox.

Eighty-nine cases and seventeen deaths have occurred in the Borough from this disease during the year; the number of cases reported in the Borough last year was sixteen, of which three died. A greater number of cases has come to my knowledge during the year than in any year since 1875, when Small-pox was epidemic.

DEATHS AND DEATH-RATE FROM SMALL-POX PER 100,000
OF THE POPULATION IN 20 LARGE ENGLISH TOWNS.

Twenty large towns compared.

Town.	Population.	Deaths from Small-Pox in the year 1882.	Rate per 100,000.			
			1882.	1881.	1880.	1879.
London ...	3,893,272	431	11.1	61.9	13.0	12.7
Brighton ...	109,595	4	3.6	8.3	0.0	0.0
Portsmouth...	129,916	0	0.0	0.0	0.0	0.0
Norwich ...	88,821	0	0.0	1.1	0.0	0.0
Plymouth ...	74,449	0	0.0	2.6	0.0	0.0
Bristol ...	210,134	0	0.0	0.0	0.9	0.0
Wolverhampton ...	76,756	4	5.2	0.0	0.0	0.0
Birmingham ...	408,532	17	4.2	0.7	0.5	0.0
Leicester ...	126,275	0	0.0	0.0	0.0	0.0
Nottingham...	198,573	51	25.7	1.1	0.0	0.6
Liverpool ...	560,377	6	1.1	6.1	0.4	0.0
Manchester ...	340,210	16	4.7	0.9	0.5	0.0
Salford ...	184,004	6	3.3	4.0	0.0	0.0
Oldham ...	115,572	5	4.3	8.0	0.0	0.0
Bradford ...	183,101	2	1.1	1.1	0.5	0.0
Leeds ...	315,998	31	9.8	0.6	0.0	0.0
Sheffield ...	290,516	4	1.4	0.0	0.3	0.0
Hull ...	153,814	15	9.5	2.6	0.0	0.0
Sunderland ...	119,065	1	0.9	0.0	0.0	0.0
Newcastle-on-Tyne...	147,626	57	38.7	6.2	0.0	0.0
In 20 towns ...	7,881,490	650	8.2	32.4	6.5	6.1

In the Table below are given the number of cases and deaths resulting from this disease in the Borough since 1871 :—

Cases and Deaths in the Borough from 1871.

DATE.				Cases.		Deaths.	
1871.							
November 11th to end of year				...	359	...	43
				Total	...	359	43
1872.							
1st Quarter	...	...	...	...	798	...	96
2nd "	...	...	...	...	632	...	92
3rd "	...	...	...	...	355	...	67
4th "	...	...	...	...	192	...	44
				Total	...	1,977	299
1873.							
1st Quarter	...	...	...	...	171	...	29
2nd "	...	...	...	...	246	...	37
3rd "	...	...	...	...	124	...	18
4th "	...	...	...	...	253	...	38
				Total	...	794	122
1874.							
1st Quarter	...	...	...	...	757	...	123
2nd "	...	...	...	...	1,303	...	196
3rd "	...	...	...	...	1,059	...	165
4th "	...	...	...	...	672	...	153
				Total	...	3,791	637

Cases and Deaths in the Borough from 1871, continued.	1875.									
	1st Quarter	...	...	...	...	366		85		
	2nd "	...	...	...	...	347		72		
	3rd "	...	...	...	...	95		14		
	4th "	...	...	...	...	16		2		
					Total	...	—	824	—	173
	1876.									
	1st Quarter	...	...	...	...	2		0		
	2nd "	...	...	...	...	2		0		
	3rd "	...	...	...	...	2		0		
	4th "	...	...	...	...	5		0		
					Total	...	—	11	—	0
	1877.									
	1st Quarter	...	...	...	...	7		1		
	2nd "	...	...	...	...	20		3		
	3rd "	...	...	...	...	20		3		
	4th "	...	...	...	...	3		1		
					Total	...	—	50	—	8
	1878.									
	1st Quarter	...	...	...	...	3		0		
	2nd "	...	...	...	...	4		0		
	3rd "	...	...	...	...	10		2		
	4th "	...	...	...	...	10		3		
					Total	...	—	27	—	5
	1879.									
	1st Quarter	...	...	...	...	1		0		
	2nd "	...	...	...	...	0		0		
	3rd "	...	...	...	...	3		0		
	4th "	...	...	...	...	0		0		
					Total	...	—	4	—	0
	1880.									
	1st Quarter	...	...	...	...	2		0		
	2nd "	...	...	...	...	5		1		
	3rd "	...	...	...	...	8		1		
	4th "	...	...	...	...	3		0		
					Total	...	—	18	—	2
	1881.									
	1st Quarter	...	...	...	...	5		5		
	2nd "	...	...	...	...	9		1		
	3rd "	...	...	...	...	2		0		
	4th "	...	...	...	...	0		0		
					Total	...	—	16	—	6
	1882.									
	1st Quarter	...	...	...	...	0		0		
	2nd "	...	...	...	...	43		6		
	3rd "	...	...	...	...	33		9		
	4th "	...	...	...	...	13		2		
					Total	...	—	89	—	17
Grand Total					...			7,960		1 312

DISEASE MAP.

The distribution of three of the Zymotics, Scarlet Fever, Measles, and Typhoid, is indicated on a map appended to the Report. Disease Map.

On glancing at the map it will readily be seen that, as in previous years, each of these diseases is pretty equally scattered over the Borough, with the usual exceptions that Edgbaston and the greater portions of Market Hall and St. Paul's Wards are nearly free from these diseases.

The immunity of Edgbaston Ward is accounted for by the sparseness of its population, and the superiority of its social and sanitary conditions to those in most of the other parts of the Borough, while the freedom of Market Hall and Saint Paul's Wards from these diseases is due to the fact that they are largely occupied by manufactories, business premises, and the like, and that, as a result, the population is not dense and the number of children is small.

II. CONSTITUTIONAL DISEASES.

The Deaths from this group of diseases amounted last year to 1,297 and were equivalent to a Death-rate of 3·2 per 1,000 of the population. Constitutional diseases.

The fatality of Tabes Mesenterica and of Phthisis (Consumption), shows a considerable increase; the latter destructive disease had for several years a continuously diminished Death-rate.

III. LOCAL DISEASES.

To this class 3,769 Deaths have been attributed, the rate of mortality being 9·2 per 1,000 persons living. Local diseases.

Diseases of the Lungs have proved less fatal than in 1881, while Apoplexy and Kidney Diseases have been more than usually destructive to life.

IV. DEVELOPMENTAL DISEASES

have resulted fatally in 1,280 instances. The Deaths from this class of disease are equivalent to a rate of 3·1 per 1,000 of the population. Each disease of this group exhibits an augmented mortality when compared with last year, but the increase is most conspicuous in Child-birth and Old Age. Developmental Diseases.

V. VIOLENT DEATHS.

The Deaths in this class manifest a diminished rate of mortality in comparison with recent years, the number of Deaths being 335, and the Death-rate only 0·8 against 0·9 in each of the two previous years. Violent Deaths.

Detailed particulars relating to the distribution of mortality among certain diseases, ages, and localities may be found on the two following pages.

TABLE A.

DEATHS FROM SEVERAL CAUSES AT ALL AGES AND AT SIX GROUPS OF AGES
DURING THE YEAR 1882.

1882.	DEATHS AT THE FOLLOWING AGES.						DEATHS AT ALL AGES.						
	Under 5 years.		5-20	20-40	40-60	60 and up.	1882	Corrected averages 5 years 1877-1881	1881	1880	1879	1878	1877
	0-1	1-5											
ALL CAUSES ...	2452	1527	596	1028	1363	1459	8425	9044	7938	8088	8650	9662	9038
Class I.—Zymotic Diseases.													
Small-pox ...	1	...	8	7	...	1	17	4	6	2	...	5	8
Measles ...	33	104	13	...	...	...	150	153	132	63	169	54	309
Scarlet Fever ...	73	167	72	3	1	...	256	383	164	123	309	995	237
Diphtheria ...	4	25	17	1	2	...	49	66	57	51	71	83	52
Whooping Cough ...	122	186	10	...	...	1	319	370	362	217	384	455	369
Fever { Typhus ...	...	...	...	...	...	...	...	1	2	1	4	2	1
Enteric ...	...	4	22	32	8	1	67	86	51	67	64	119	119
Simple Continued ...	...	4	9	5	2	...	20	20	13	16	19	26	24
Diarrhoea ...	361	123	10	7	8	25	534	522	339	777	234	680	455
Cholera and Choleraic Diarrhoea ...	...	...	...	...	1	...	1	3	2	7	...	2	2
Croup (true) ...	12	40	19	3	1	...	75	76	74	80	95	81	84
Puerperal Fever ...	...	...	1	13	2	1	17	10	8	16	11	12	7
Rheumatism ...	...	1	11	20	9	3	44	39	36	4	31	38	45
Syphilis ...	43	5	1	5	2	...	56	64	48	60	69	82	60
Delirium Tremens and Intemp. ...	...	...	...	4	5	...	9	17	12	20	9	15	23
Other Zymotic Diseases ...	48	10	8	6	15	10	97	98	101	107	63	83	81
Class II.—Constitutional Dis.													
Dropsy ...	5	7	6	9	12	13	52	63	50	48	65	72	69
Cancer ...	...	3	1	23	83	78	188	187	204	174	190	158	174
Other Diathetic Diseases ...	...	4	4	3	9	16	41	26	26	20	31	28	23
Tabes Mesenterica ...	134	33	6	...	...	...	173	138	133	136	120	142	132
Phthisis ...	15	18	101	355	242	46	777	794	699	717	771	839	812
Hydrocephalus ...	26	18	...	1	...	...	45	55	54	51	51	47	57
Other Tubercular Diseases ...	11	7	3	...	...	...	21	19	26	19	14	16	19
Class III.—Local Diseases.													
Apoplexy ...	...	...	3	11	87	103	204	179	175	191	189	173	163
Paralysis ...	...	2	2	9	40	60	122	130	121	120	140	104	136
Epilepsy ...	...	3	7	12	11	2	35	59	55	62	57	47	59
Convulsions ...	164	49	10	...	2	...	225	278	224	214	284	393	310
Other Brain Diseases ...	75	110	52	48	47	38	370	405	360	347	374	440	419
Heart Disease ...	5	4	35	91	174	153	462	457	459	395	480	420	525
Bronchitis ...	293	222	15	51	226	340	1147	1323	1239	1135	1435	1175	1289
Pneumonia ...	59	92	25	68	64	35	343	404	375	445	371	372	307
Other Lung Diseases ...	60	33	14	25	32	22	186	215	178	193	206	208	242
Digestive Organs—Disease of	74	27	42	52	105	78	378	360	353	358	319	334	338
Urinary Organs—Disease of	2	9	8	25	76	46	168	172	141	148	168	188	180
Generative Organs—Disease of	...	...	2	8	7	3	20	22	16	16	27	23	26
Joint Disease ...	10	16	8	7	5	4	50	50	44	45	40	35	42
Skin Disease ...	9	8	8	14	13	9	61	63	60	60	57	73	58
Class IV.—Developmental Dis.													
Premature Birth ...	195	...	...	...	...	...	195	196	170	185	202	222	163
Teething ...	38	29	...	...	...	...	67	69	60	52	75	87	65
Malformations ...	20	...	...	...	...	...	20	27	20	22	24	28	37
Childbirth ...	...	...	2	67	5	...	74	46	41	36	54	39	52
Old Age ...	...	...	...	...	1	318	319	340	314	252	333	353	366
Atrophy ...	484	105	3	2	...	11	605	631	621	656	583	599	659
Class V.—Violent Deaths.													
Accident ...	116	56	36	26	30	30	294	347	322	292	359	345	347
Homicide ...	3	...	...	1	2	...	6	11	16	9	15	7	11
Suicide	11	19	5	35	35	35	34	34	35	40
Causes not Specified, or ill-defined	12	3	2	3	6	7	33	21	40	30	35	20	30

TABLE B.

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DEATHS FROM SEVERAL CAUSES REGISTERED IN THE VARIOUS STATISTICAL SUB-DIVISIONS AND IN PUBLIC INSTITUTIONS.

1882.	Borough	REGISTRATION SUB-DISTRICTS.								PUBLIC INSTITUTIONS.						
		Ladywood	St. Thomas's	St. Martin's	St. George's	All Saints'	Deritend	Duddleston	Edgbaston	General Hospital	Queen's Hospital	Children's Hospital	Borough Hospital	Workhouse	Lunatic Asylum	Other Institutions
ALL CAUSES ...	3425	971	818	863	1567	1501	1365	1100	240	249	124	78	76	522	62	15
Class I.—Zymotic Diseases.																
Small-pox ...	17	...	...	...	...	17	...	...	...	...	...	...	17	...	...	...
Measles ...	150	8	19	27	24	15	28	27	2	...	...	...	...	4	...	...
Scarlet Fever ...	256	29	10	15	41	88	44	29	...	9	2	9	59	...	...	...
Diphtheria ...	49	10	3	2	...	24	9	1	...	...	...	...	...	...	...	...
Whooping Cough ...	319	41	15	37	55	43	77	47	4	2	...	7	...	...	...	...
Fever { Typhus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ...	67	9	7	5	14	15	8	8	1	6	4	1	...	4	...	1
Simple continued ...	20	1	3	2	3	1	4	5	1	...	...	...	...	...	...	...
Diarrhoea ...	534	60	52	74	125	57	90	71	5	2	...	5	...	7	...	...
Cholera and Choleraic Diarrhoea ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Croup (true) ...	75	7	2	5	16	13	16	12	4	...	...	...	...	...	...	...
Puerperal Fever ...	17	2	...	1	5	3	4	1	1	...	...	...	...	...	...	...
Rheumatism ...	44	3	5	2	11	8	7	4	4	1	...	...	...	1	...	...
Syphilis ...	56	1	6	2	6	20	8	13	...	...	2	...	...	16	...	...
Delirium Tremens and Intemp. ...	9	...	1	...	4	3	...	1	...	1	1	...	...	1	...	...
Other Zymotic Diseases ...	97	15	7	6	13	25	15	14	2	3	1	4	...	17	...	...
Class II.—Constitutional Dis.																
Dropsy ...	52	6	9	9	6	6	9	6	1	2	...	1	...	6	...	...
Cancer ...	188	30	19	19	35	39	22	14	10	16	7	2	...	14	2	...
Other Diathetic Diseases ...	41	4	5	1	11	6	5	6	3	3	1	...	...	...	...	...
Tabs Mesenterica ...	173	17	2	35	45	20	28	25	1	...	...	...	...	...	...	...
Phthisis ...	777	95	80	63	130	188	107	95	14	15	9	7	...	107	9	2
Hydrocephalus ...	45	7	4	5	6	4	11	7	1	...	...	...	...	...	...	...
Other Tubercular Diseases ...	21	2	1	1	8	...	1	8	...	1	...	...	...	...	...	...
Class III.—Local Diseases.																
Apoplexy ...	204	22	24	19	26	55	30	24	4	6	2	1	...	43	1	...
Paralysis ...	122	14	13	11	12	39	14	13	6	2	...	2	...	20	15	...
Epilepsy ...	35	1	3	5	3	12	5	2	4	...	...	...	...	2	6	...
Convulsions ...	225	33	11	29	47	24	52	27	2	2	...	...	...	3	...	...
Other Brain Diseases ...	370	45	27	40	61	63	64	56	14	9	4	3	...	12	14	...
Heart Disease ...	462	51	64	50	83	69	67	62	26	17	13	4	...	20	1	3
Bronchitis ...	1147	94	127	153	239	188	172	141	33	8	8	...	...	96	4	1
Pneumonia ...	343	41	31	41	60	54	69	35	12	14	4	7	...	24	2	...
Other Lung Diseases ...	186	24	17	17	39	23	29	32	3	6	2	4	...	4	1	1
Digestive Organs—Disease of	378	37	48	30	74	58	69	48	16	22	14	1	...	3	2	3
Urinary Organs—Disease of	166	21	20	8	34	31	29	12	11	16	10	3	...	9	...	...
Generative Organs—Disease of	20	5	...	2	2	3	3	1	4	3	...	...	...	...	...	...
Joint Disease ...	50	4	8	2	16	2	12	4	2	4	1	1	...	...	...	1
Skin Disease ...	61	13	8	10	12	7	6	2	3	6	3	4	...	5	...	2
Class IV.—Developmental Dis.																
Premature Birth ...	195	48	16	15	27	26	42	16	5	...	...	...	...	1	...	...
Teething ...	67	14	3	4	15	11	14	6	...	...	...	...	...	...	...	...
Malformations ...	20	1	1	1	3	4	3	6	1	...	...	...	...	1	...	...
Childbirth ...	74	10	9	4	16	13	14	6	2	...	...	...	...	...	...	...
Old Age ...	319	25	13	32	38	111	40	43	17	...	...	...	...	79	4	...
Atrophy ...	305	80	64	51	90	72	96	138	14	2	...	3	...	17	...	...
Class V.—Violent Deaths.																
Accident ...	294	33	45	31	100	26	33	22	4	65	28	8	...	1	1	...
Homicide ...	6	...	3	1	...	...	...	...	1	1	2	...	...	...	...	...
Suicide ...	35	6	10	...	7	1	5	5	...	2	4	...	...	...	...	...
Causes not Specified, or ill-defined	33	2	3	1	4	14	3	5	1	2	...	1	...	...	...	...

METEOROLOGY.

Meteorology.	The year 1882 will, no doubt, be long remembered as one of the very wettest years which have been experienced in Birmingham. Notwithstanding the excessive rainfall of the year,
Temperature.	however, the mean annual temperature was slightly above the average of the last twenty years. In 1881, though the rainfall was small the temperature was below the mean, and in 1882 with an abnormally large rainfall the temperature was above the average. Wet years are usually colder, and dry years warmer than the average, so that the last two years have been exceptions to the general rule. The average temperature for the year was $48^{\circ}77$, or $0^{\circ}57$ above the average of twenty years, $1^{\circ}57$ above last year's temperature, $0^{\circ}77$ above that of 1880, and $2^{\circ}77$ above that of 1879, which was one of the coldest years of this century. The temperature during the first and fourth Quarters of 1882 was above the average, in the Spring and Summer Quarters it was below the average; thus the Winter was warm and the Summer cold, these conditions being most favourable to health. Taking the months in their order, we find that January was an exceedingly warm month, being $3^{\circ}9$ above the average, there being only four nights during the month on which there was a frost, and there was a total absence of snow. February also was a very mild month, there being only one night upon which frost was recorded, and as in January, there was not a single day on which snow fell. In March the temperature was more above the average than in either of the two preceding months, and only two frosty nights were experienced, whilst snow fell on two days only. Thus in the Winter Quarter of 1882 there were only seven nights on which the thermometer fell to 32° , and there were only two days on which snow fell, a circumstance which I believe is without parallel. One of the natural results of this extremely mild Winter was that vegetation was very forward. In April the temperature was slightly below the average, being only $1^{\circ}4$ warmer than March, whereas the temperature in April should be $6^{\circ}6$ in excess of that of March. May was a warm month although the days were cold. This is accounted for by the fact that S.W. winds were prevalent during this month, causing cool cloudy days but warm nights. June was cool, there being only one day during the month on which the thermometer reached 70° . July, August, and September were all below the average, though not to any great extent. The highest point reached by the thermometer during this year was only $78^{\circ}5$, which was attained on the 12th of August, whilst last year the absolute maximum temperature was as high as $88^{\circ}0$. October and November were both above, whilst December was slightly below the average. A frost of ten days' duration visited us in December, it being sufficiently severe to cause the smaller pools in the neighbourhood to bear skaters. Snow fell frequently in November and December.
January.	
February.	
March.	
April.	
May.	
June.	
July.	
August.	
September.	
October, November, December.	
Snow.	

Strong gales occurred in the 1st, 2nd, and 4th Quarters of the year. Frequent thunderstorms visited us in the 2nd

Quarter, and a severe thunderstorm occurred on the night of November 9th. Meteorology
continued.

As before stated, the rainfall during the year was excessive, being one of the largest ever recorded here. So heavy and persistent has it been, that since 1866 there has only been one year (1872) in which a larger quantity has fallen. The average rainfall for the ten years 1867-1876 inclusive, was 31·93 inches; last year it amounted to no less than 43·59 inches or 11·66 inches above the average. In 1881 there were eight months with a rainfall less than the mean. In 1882 there were eight months in which it was considerably in excess of the mean. January and September were the only months which could be considered dry. Since 1874, with two exceptions, the rainfall has been above the average every year, consequently we may fairly expect that the next few years will be drier, less gloomy, and consequently more favourable to the interests of the farmer. The enormous rainfall in the last three months of the year seriously affected agricultural operations, giving farmers no opportunity to get their lands into condition or sow their seed.

Weekly records of Meteorological observations, side by side with statistics of mortality from certain more commonly existing forms of disease, are given in the following Table, while in the coloured Chart at the beginning of this Report is presented a graphic delineation of Meteorological conditions and total mortality for each day of the year.

MONTHS.	TEMPERATURE.			RAINFALL.		
	Mean Temperature.	Average for 20 years 1861-1880 inclusive.	Above or below the average.	Rainfall for Month.	Average for 10 years 1867-1876 inclusive	Above or below the average.
January	40·5	36·6	+ 3·9	2·41	2·92	— 0·51
February.....	41·9	39·1	+ 2·8	2·15	2·26	— 0·11
March	45·6	40·6	+ 5·0	2·57	2·47	+ 0·10
April	47·0	47·2	—0·2	4·18	2·01	+ 2·17
May	52·9	51·9	+ 1·0	3·19	2·27	+ 0·92
June	55·7	58·4	—2·7	4·00	2·88	+ 1·12
July.....	60·0	61·6	—1·6	3·83	2·28	+ 0·95
August	59·2	60·5	—1·3	2·48	2·54	— 0·06
September	53·7	55·4	—1·7	3·03	3·67	— 0·64
October	48·9	48·2	+ 0·7	6·61	3·33	+ 3·28
November	42·0	40·3	+ 1·7	4·56	2·09	+ 2·47
December	37·8	37·9	—0·1	4·59	3·21	+ 1·38
Year.....	48·8	48·2	+ 0·6	43·60	31·93	+ 11·67

Monthly
Temperatures
and Rainfall.

METEOROLOGY, BIRTHS, DEATHS, AND MORTALITY FROM CERTAIN PREVALENT DISEASES FOR EACH WEEK OF 1882.

Number	Week. Date of Ending.	Temperature of the Air.			Air Pressure.	Horizontal Movement of Air in Miles.	Mean Humidity, complete Saturation=100.	Rainfall in inches.	Births.	Deaths at the Ages.			Deaths from										
		Highest during week.	Lowest during week.	Mean Temperature.						All Ages.	Under 1 year.	1 to 5 years.	Over 60.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	
1882.																							
1	Jan. 7	53.5	35.0	43.7	.360	1464	89.0	.78	300	194	44	60	28	...	11	9	2	13	1	4	13	47	
2	" 14	50.0	36.5	41.9	.420	1071	94.0	.64	334	165	45	29	31	...	5	5	...	12	1	1	11	47	
3	" 21	44.0	30.0	37.0	.278	559	98.0	.02	268	161	51	35	24	...	3	7	1	11	...	3	9	34	
4	" 28	48.2	30.0	39.3	.561	549	89.0	.02	281	178	46	44	32	...	5	6	2	11	...	5	13	35	
5	Feb. 4	48.5	29.0	38.1	.540	967	96.0	.95	316	174	49	32	33	...	3	5	1	12	3	2	15	47	
6	" 11	47.0	34.0	39.5	.567	670	94.0	.13	314	162	51	23	34	...	5	4	1	6	2	2	15	42	
7	" 18	54.0	33.5	44.5	.474	1584	86.0	.89	297	177	37	30	30	...	4	3	3	9	2	1	13	46	
8	" 25	53.0	37.0	43.0	1.106	1451	86.0	.07	314	172	50	30	36	...	6	4	1	7	2	1	18	42	
9	Mar. 4	49.0	31.0	43.6	.585	1327	88.2	.13	350	161	54	24	33	...	2	3	2	4	...	2	14	41	
10	" 11	60.5	36.0	48.6	.786	1526	82.0	.08	332	132	37	27	19	...	...	2	1	5	1	4	12	38
11	" 18	61.8	35.5	46.3	.287	547	82.0	.00	275	145	28	36	27	...	4	3	1	3	1	3	16	35	
12	" 25	63.8	29.5	44.1	.476	1377	77.0	.39	290	178	40	40	27	...	9	5	1	10	3	1	19	38	
13	April 1	55.5	33.0	45.9	.629	1764	80.1	.27	297	161	36	35	31	...	10	2	2	9	1	2	9	42	
14	" 8	58.5	33.0	45.5	.549	1359	87.0	.18	291	153	33	32	23	...	8	4	2	1	...	3	16	38	
15	" 15	60.0	31.0	47.3	1.178	889	79.0	.76	298	188	50	32	42	...	1	6	...	5	1	3	25	37	
16	" 22	62.0	30.0	48.8	.883	1074	79.0	.72	286	178	32	31	44	...	6	4	2	3	5	2	21	33	
17	" 29	57.0	39.0	47.1	.621	1232	76.1	.17	292	176	47	36	35	...	3	3	...	5	6	6	17	25	
18	May 6	66.0	37.0	49.6	.269	741	79.1	.74	292	139	36	25	28	...	4	4	1	7	...	3	17	17	
19	" 13	68.2	38.5	51.3	.402	652	68.0	.07	287	140	51	19	30	...	1	4	2	1	5	...	5	13	32
20	" 20	66.5	34.5	50.2	.547	794	63.0	.00	320	134	50	17	10	...	3	3	1	6	2	3	14	30	
21	" 27	68.5	41.0	55.8	.633	911	79.1	.99	305	152	41	23	27	...	8	2	1	6	1	2	19	30	
22	June 3	68.0	42.0	57.1	.501	703	71.0	.50	266	148	39	27	36	...	1	4	3	1	5	...	3	19	20
23	" 10	66.0	47.5	56.0	.429	1007	81.1	.71	287	150	39	29	21	...	1	4	1	7	4	4	16	21	
24	" 17	61.5	43.0	51.6	.421	1534	72.0	.85	289	146	37	23	21	...	3	2	3	1	6	2	21	31	
25	" 24	64.8	46.5	56.3	.282	744	78.1	.19	256	124	32	18	26	...	4	4	...	1	1	2	18	39	
26	July 1	72.0	49.0	59.7	.217	535	81.0	.24	291	122	37	19	21	...	1	1	...	4	1	6	10	39	
27	" 8	76.0	49.5	60.8	.809	693	75.0	.73	252	136	36	12	21	...	4	3	4	1	...	1	7	17	21
28	" 15	75.0	47.5	58.9	.476	833	81.1	.93	272	111	31	23	17	...	2	3	...	2	...	3	13	19	
29	" 22	70.0	49.0	60.0	.582	808	75.0	.50	290	122	50	11	21	...	1	1	...	4	1	7	11	13	
30	" 29	71.5	48.0	59.8	.871	686	74.0	.64	261	136	52	15	17	...	1	2	...	4	1	19	20	18	
31	Aug. 5	72.0	49.0	60.9	.267	1268	73.0	.01	275	142	53	23	19	...	3	6	1	2	...	2	11	14	
32	" 12	77.0	48.5	61.0	.210	609	76.0	.00	256	178	64	36	24	...	3	4	...	6	1	27	13	20	
33	" 19	78.5	47.0	62.2	.332	638	87.0	.70	286	197	92	34	25	...	3	2	4	5	1	6	2	9	13
34	" 26	65.0	47.0	55.7	.789	1096	74.1	.36	277	226	120	34	27	...	...	2	3	6	2	7	15	15
35	Sept. 2	65.0	48.0	57.2	.671	1063	80.1	.13	272	218	95	34	36	...	1	7	2	2	1	7	21	20	
36	" 9	67.0	42.5	55.6	.752	526	86.0	.79	243	176	68	31	25	...	1	7	1	6	...	35	9	19	
37	" 16	64.0	34.0	50.4	.381	426	84.0	.03	256	147	45	32	23	...	1	4	...	6	...	25	19	26	
38	" 23	67.5	40.5	53.1	.235	811	85.0	.73	287	174	63	33	30	...	1	4	...	5	...	24	17	24	
39	" 30	67.0	44.0	53.8	.707	703	84.0	.75	251	142	42	26	25	...	1	5	...	7	3	12	14	24	
40	Oct. 7	65.5	46.0	54.9	.794	1094	87.0	.57	312	158	41	30	29	...	1	7	1	7	4	8	16	32	
41	" 14	61.5	41.0	50.1	.635	380	98.1	.75	266	156	44	32	24	...	2	8	1	3	4	11	11	32	
42	" 21	58.5	41.0	47.8	.601	777	94.1	.17	284	139	44	28	19	...	1	7	2	3	...	10	12	23	
43	" 28	56.5	33.0	44.1	.472	864	94.2	.62	294	159	45	26	29	...	1	8	...	2	5	11	12	33	
44	Nov. 4	57.0	36.0	47.6	.443	1237	89.1	.13	277	141	41	28	20	...	1	7	1	4	3	5	18	22	
45	" 11	58.0	36.0	44.0	.880	1956	89.1	.36	317	168	41	36	27	...	...	1	10	1	9	4	17	31
46	" 18	46.0	28.0	35.7	.877	804	91.0	.56	279	178	41	36	33	...	2	11	1	10	3	9	25	41	
47	" 25	54.0	31.5	43.2	.583	1295	88.1	.03	270	211	56	30	38	...	1	6	1	13	1	2	21	50	
48	Dec. 2	46.5	29.0	37.9	.808	1482	89.0	.98	308	159	40	20	31	...	...	7	...	...	2	1	17	36
49	" 9	48.5	26.5	34.4	.523	1405	97.1	.92	256	169	41	26	32	...	2	9	1	6	...	3	10	40	
50	" 16	39.0	16.0	29.8	.321	437	100.0	.41	294	181	33	37	35	...	1	8	2	10	7	1	14	57	
51	" 23	48.0	37.0	42.5	.706	1179	94.0	.58	286	181	34	41	34	...	1	9	1	10	2	3	17	39	
52	" 30	55.0	34.0	45.5	.475	1242	92.1	.13	217	203	48	37	49	...	...	5	...	12	1	4	15	66

II. SANITATION.

i. *Influences affecting or threatening to affect injuriously the Public Health.* Street Improvements. The progress of street improvement during the year has exerted a very beneficial influence on the health of the contiguous neighbourhood, in accordance with the anticipations entertained at the time of the promotion of the scheme, in and before the year 1876. This is well seen from a Report, which in pursuance of a Resolution I made to the Improvement Committee. The following is a copy of both the Resolution and Report:—

Improvement Committee,

April 26th, 1882.

Resolved,—That with reference to the evidence given by the Medical Officer of Health before the Inspector of the Local Government Board on the 15th March, 1876, in relation to the following streets, viz:—Lower Priory, Rope Walk, Bailey Street, Balloon Street, Potter Street, Russell Street, Princip Street, Aston Road, and Tanter Street, the Medical Officer of Health be requested to ascertain, and report to the Improvement Committee the Death-rate of the above mentioned streets for the years 1879, 1880, and 1881, and that such report be in a form showing in parallel columns the result of such report in comparison with the Death-rate given by the Medical Officer of Health in his evidence in 1876. Resolution of Improvement Committee.

“Health Department,

“The Council House,

“May 5th, 1882.

“TO THE IMPROVEMENT COMMITTEE.

“MR. CHAIRMAN AND GENTLEMEN,

“I beg to report, that in pursuance of resolution dated 27th of April, I have had taken the census of the streets named therein, and have calculated by it the Death-rate in each street. Report.

“The results given below are eminently satisfactory, inasmuch as they unmistakably show that the anticipations of improvement in the health of the insanitary area by the execution of the Improvement Scheme have been more than realized.

Street
Improvement
continued.

"The population in the streets named below having declined during the last three years, the Death-rate given for that period is rather over—than under stated:—

STREET.			DEATH-RATES.	
			Average of 3 years, 1873-4-5.	Average of 3 years, 1879-80-81.
Lower Priory	...	...	62.5	21.9
Rope Walk	...	...	42.0	24.9
Bailey Street	...	...	97.0	25.6
Balloon Street	...	...	45.0	No Population now.
Potter Street	...	...	44.0	28.8
Russell Street	...	...	55.0	19.1
Princip Street	...	...	46.0	13.2
Aston Road	...	...	40.0	19.3
Tanter Street	...	...	47.0	22.0

"I remain,

"Mr. Chairman and Gentlemen,

"Yours faithfully,

"ALFRED HILL, M.D.,

"*Medical Officer of Health.*"

Beneficial
results.

The results are such as must exceed the expectations and even the hopes of the most sanguine advocates of the improvement, and while they more than justify the operations undertaken, they indicate that future work of a similar kind is calculated to prove of great sanitary advantage, and to fully repay in health every judicious expenditure in money.

Closets, etc.

A large number of old ashpit closets have been abolished, and replaced by pan privies and ashtubs.

Surface Filth.

There is no improvement to be recorded in the condition of the street surfaces; the bye law prohibiting the deposit of refuse matter continues to be disregarded, in spite of the verbal remonstrances of the Assistant Inspectors of Nuisances and the printed notices issued from the Police Department. Nothing less than legal prosecution seems likely to have any deterrent effect on the offenders, and I have no doubt you will see fit to take early and effectual steps to suppress a nuisance which seriously affects, not only the character and comfort, but also the health of the town; there is, however, another direction in which I submit it is necessary that efforts should be made, and that is towards a more extended system of scavenging. Compared with the streets of large continental, and indeed many English towns, the streets of Birmingham are very dirty and untidy, a state of things to be remedied only by a freer use of the besom and the shovel. I know that the cost of such work is heavy, but so also is that of deteriorated public health, and giving due weight to both these considerations, there is no doubt in my mind that it would be the true economy to incur the required cost.

The attention of the Inspectors has been constantly directed to the practice of keeping fowls, pigeons, rabbits, etc., in cellars, attics, and other improper places, and I have reason to believe that the practice has been considerably checked. Improper keep
ing of animals

Offences due to the emission of dense smoke have been apparently rather fewer than last year, 173 manufacturers having been reported, and 76 summoned, against 183 reported, and 79 summoned, in the year 1881; and as far as I can judge there is a general improvement in the condition of the atmosphere. Smoke.

In connection with this subject, Mr. Councillor Lawson Tait and myself were appointed by your Committee a deputation to visit the International Exhibition of Smoke-Preventing Appliances at South Kensington. The following is a copy of our joint Report. International
Exhibition

“HEALTH DEPARTMENT,

Report

“THE COUNCIL HOUSE,

“January 13th, 1882.

“TO THE HEALTH COMMITTEE.

“GENTLEMEN,

“We beg to report that in pursuance of a Resolution of your Sub-Committee, we paid two visits to the International Exhibition of Smoke-Preventing Appliances, held at South Kensington. The Exhibition is very complete, and well repaid the careful examination we made of the large number of Inventions displayed.

“As a general conclusion, we may say that if the principles of combustion, which are there exemplified, were fully carried out in our manufactories and in our domestic heating, the smoke nuisance and the occurrence of the worst kind of fogs, such as are peculiar to towns, would at once cease.

“Assuming what everyone knows to be true, that complete combustion of fuel is at once smokeless and economical, we may again point out that the interests of public health and true economy are in this case absolutely identical.

“Town smoke is produced in large volumes by the chimneys of manufacturers, but it may be doubted if the domestic fire-places now in use are not quite as much to blame for the smoke nuisance. We may divide our remarks, for the sake of convenience, upon these two subjects; for the principles which regulate the combustion, the objects to be achieved, and the fuel used in the two cases are quite different.

Report
continued.

“The manufacturer generally burns his fuel in a closed chamber, whilst the domestic grate is open; the temperature to be required in the first case is much higher than in the second, and the fuel of the furnace is not of as good a quality as that of the grate.

“It may be said with certainty of all boiler and other furnaces, that an absolute freedom from smoke may be obtained by careful stoking. For this purpose a great variety of mechanical stokers are recommended, and are on exhibition at South Kensington. There can be no doubt that the adoption of these would prove a great gain in the prevention of smoke and the economy of fuel and heat. The various forms exhibited differ much in detail, but they are all based upon the following general principles:—

“I. A regular and continuous supply and distribution of the fuel.

“II. A preliminary coking of the fuel upon a heated plate just at the entrance of the furnace.

“III. A continuous and regular advance of the incandescent coal from a hot to a hotter part of the fire by means of plungers and moving fire bars.

“IV. A more perfect combustion of the gases by various means, as bridges, injectors, &c.

“We need not select particular examples for commendation, but one exhibited by Messrs. Waller and Co., of Southwark, particularly attracted our attention, because the fire bars were kept cool by a steam jet, and the steam being introduced into the burning fuel would manifestly assist very materially in effecting complete combustion. We went to the works of Messrs. Waller and saw the machine in action, and we recommend that it be tried for the stoking of the furnaces at Montague Street with the rubbish fuel used there.

“Apart from any particular form of such appliances, we strongly recommend the universal adoption of the principles of the mechanical stokers as a powerful remedy for smoke abatement, and for economising both labour and fuel. One invention exhibited at South Kensington we must specify, because it was the only thing of its kind, and it is evidently just the contrivance which will succeed with muffles and other forms of furnaces where mechanical stoking is not possible.

“We allude to the ‘Wilson Gas Producer,’ exhibited by Mr. Bernard Dawson.

“The principle of this contrivance is that the fuel is completely reduced to its gaseous elements in a separate furnace by means of a slow and very imperfect combustion, a sort of partial distillation by means of air driven in by a steam jet. The gas thus produced is led by a duct to the

furnace where it is wanted, and after due admixture with air is burnt in an absolutely smokeless flame like a huge Bunsen burner. By the kindness of Messrs. Hatton of Bilston some of the Members of the Committee have seen the arrangement in actual work, and are quite satisfied of its utility for the complete prevention of smoke and for the economy of fuel. Report
continued.

“For the prevention of smoke from domestic grates, the variety of contrivances is endless and positively bewildering. A great many of them, by far the majority, may be put aside as much too fanciful for general use, but from a careful inspection of the general display the following conditions may be laid down as those which will secure smokeless fires :—

“I. The consumption of gas only as fuel.

“II. The consumption of coke alone or mixed with gas.

“III. The combustion of anthracite coal.

“IV. The combustion of bituminous coal in specially constructed grates.

“The objection to the first is that most of the arrangements for burning gas as fuel have, till quite lately, been too costly for general use, most of the heat having been allowed to waste.

“There would be no difficulty in selecting samples from the Exhibition, of arrangements by which the whole or very nearly the whole of the heat which can be derived from burning gas is used, and at a cost not greater than that of a coal fire, especially when the trouble and dirt of the latter are placed in the account.

“To use the words of Sir Frederick Bramwell, we like a “pokeable companionable fire,” and therefore gas fires are not popular. The combustion of gas and coke, as suggested by Dr. Siemens, supplies this want, and is absolutely smokeless, but has been a matter of difficulty.

“There are many arrangements on view at the Exhibition which overcome the difficulty, and the fire-clay grate of M. Perret seems to us to merit special attention. The amount of heat given off by this fire-place is positively astonishing, there is an utter absence of smoke, and this without the use of any mechanical appliance whatever.

“Finally, there are grates so constructed as to render possible the burning of common coal without the production of smoke, and with increased heat.”

Notwithstanding the advantages in cleanliness, health, and economy, to be derived from the adoption of the various appliances described in the foregoing Report, it is a subject

Report
continued.

of regret that very little has been done, either in the metropolis, or the provinces, to put them to practical use.

Electrical
Exhibition.

A subject more or less closely connected with Smoke Prevention is that of Light production, and it is one having also an important relation to health. Your Committee, therefore, appointed Mr. Alderman Cook and myself to visit the Electrical Exhibition at the Crystal Palace. The following is a copy of our Report:—

“We beg to report that, in accordance with a request of your Committee, we have visited the Electrical Exhibition at the Crystal Palace.

“The Exhibition embraces a variety of subjects, such as Electricity applied to the production of Motion, to Telegraphy and Signalling, to the firing of Mines, and to Lighting, in illustration of all of which there are many instruments and forms of apparatus on exhibition.

“The object of our visit, however, was to acquaint ourselves with the various methods of Electric Lighting, and the measure of success which the new system has achieved.

“As far as the Lamps are concerned, there are two distinct methods of Electric Illumination, viz: by the Brush system, or arc light, and by the incandescent lamp.

“The Arc Light is so called from the shape of the flame, which depends on the passage of electricity from the point of one carbon rod to the point of another, through a short space of intervening air; the luminosity between these two points is due to the opposition offered to the passage of the electricity through the air, which is a very bad conductor of electricity, the wires and carbons themselves shewing no luminosity, in consequence of their good conducting power; the flame or light thus produced assumes the form of a curve or arc, connecting the two Carbon points.

“A number of systems on this principle were exhibited, among others may be mentioned the Anglo-American Brush Electric Light Company, whose lamps give a very excellent and steady light; the Maxim and Weston systems, by the Electric Light and Power Generator Company, the light from which is very steady and brilliant; the Brockie system, exhibited by the British Electric Light Company, which is not remarkable for the steadiness of its light, jumping considerably; the Mackenzie system, which is very variable in the intensity of the light emitted; and the Jablochkoff system, which, as far as we saw, is inferior to all the rest.

“This Brush, or Arc Light system, is best adapted to very large rooms, and to open air purposes.

Electrical
Exhibition
continued.

“The Incandescent Light is based on a principle similar to that of the Arc Light, viz: resistance to the electricity, but the medium of resistance is totally different; instead of air it is a thread of carbon. It has long been known that the current of electricity, which would readily pass through a copper wire without warming it, in passing through a thin platinum wire makes the latter intensely red or white hot. It is found, however, that the thread of carbon acts in a similar manner to platinum, but is capable of being made much hotter and therefore much more luminous than platinum, while it is more durable, and cheaper. The carbon threads used are made from various substances.

“Swan, the Inventor of the Incandescent Lamp, uses a thread made from a strip of carbonised parchmented cardboard; Edison employs one made from a fibre of bamboo. The other systems of incandescent lamps are the Lane Fox, the Maxim, and the British; they all resemble the two described, differing only, either in the material used for the thread, or its disposition, or its mode of connection with the wire terminals of the machine which generates the electricity. The lamps used in this system are all small, generally of a globular, pear-shaped, or flask-shaped form, and quite exhausted of atmospheric air. Swan's lamps, which formerly cost a pound, are now sold at five shillings each, their duration is said to be about 1,000 hours of actual burning.

“This lamp is said to be superior to all others, inasmuch as from the same amount of mechanical power, they give the most light.

“A very noticeable point in connection with the various lamps was the variety of tint; the arc lights, as is well known, change in colour from white to some shade of purple, but we noticed that the incandescent lamps, though steady and unchangeable in colour, differed permanently among themselves as to tint, some being white, others yellow, and others again reddish, giving the impression that the lamps are made from different coloured glass; this, however, is not the case, the different colours being apparently due to the greater or less quantity of the electricity supplied.

“The electricity necessary to produce the electric light was formerly generated by voltaic batteries, it is now generated by means of magneto electric dynamo machines, worked by powerful steam engines.

"The Incandescent Lamp has the advantage of allowing a greater division and, therefore, a more equal distribution of the light than is possible with the Arc Lamp.

"Although the light emitted is very intense and very pure, the heat produced is so small that the globe of the Incandescent Lamp never becomes too hot to be held in the hand.

"A very valuable characteristic of the Incandescent Lamp is the protection it affords against fire, which so often endangers both health and life; the Incandescent thread being completely shielded nothing can come into contact with it and no sparks are or can be produced by it, and even if they could be produced they could not be scattered.

"Another sanitary advantage of the Electric Lamp is that very little carbonic acid is produced by the Arc burner, and none at all by the Incandescent Lamp. Again, no sulphur compounds are liberated, which is a fact bearing very favourably on both health and the preservation of books, pictures, and other articles. A recital of the advantages of the Electric Light by no means implies the abolition of the use of gas, which will necessarily continue to be used as a source of light, and will receive a much larger application as a source of heat. Among other applications, it will no doubt be used for the driving of the Dynamo machines. Colours are seen by the Electric Light just of the same tints as when seen by daylight; this fact was very perceptible in the gorgeously-coloured and gilded Alhambra Court, the ornamentation and illumination of which came out in greater beauty and distinctness than in daylight. The suitability of the Incandescent Lamps to the illumination of domestic apartments was well shown in a furnished suite of rooms, comprising breakfast, dining, and drawing rooms; the effect was extremely pleasant, lighting up every nook of the room with a most agreeable and brilliant light. There can be no doubt of the success of the Electric system of lighting as far as efficient, pleasant, and healthy illumination is concerned. Whether it can be economically employed at present is another question, but there seems good reason to believe that before long many existing difficulties will be surmounted and the system will be adopted for various purposes.

"While in London we ascertained that the Building Exhibition was open; we therefore visited it and found many subjects of interest displayed. Finding, however, that the Exhibition was about to visit Birmingham, where it is open at the present time, we felt it unnecessary to submit any remarks upon it."

The proportion of deaths, neither certified by a medical man nor by the Coroner, after an inquest had been held, was last year 1·4 per cent. for the whole Borough, as compared with 1·6 per cent. in 1881. The percentage in each Sub-District may be found below.

Certification of causes of Death.

CERTIFICATION OF THE CAUSES OF DEATH IN 1882.

Registration Sub-Districts.	Total Deaths.	Certified by			Proportion per cent. of Deaths.		
		Registered Medical Practitioners.	Coroner.	Not Certified.	Certified by		
					Registered Medical Practitioners.	Coroner.	Not Certified.
Borough of Birmingham	8,425	7,570	736	119	89·9	8·7	1·4
Ladywood	971	862	95	14	88·8	9·8	1·4
St. Thomas	818	683	111	24	83·5	13·7	2·9
St. Martin	863	781	68	14	90·5	7·9	1·6
St. George	1,567	1,369	186	12	87·4	11·2	0·8
All Saints'	1,501	1,407	82	12	93·1	5·5	0·8
Deritend	1,365	1,230	110	25	90·0	8·1	1·8
Duddeston	1,100	1,013	72	15	92·1	6·5	1·4
Edgbaston	240	225	12	3	93·7	5·0	1·2

The early information of existence of cases of Infectious Disease continues to be a desideratum. It is evident that for preventive action to attain its highest development and utility, such information is a necessity. A large number of cases are already reported, but the majority never come to my knowledge. Such information as is furnished is purely voluntary, and is due to the good feeling of a considerable number of the medical profession, about eighty in number, and constituting roughly about one-third of the medical practitioners of the town. This is certainly a considerable proportion, and quite sufficient, to show that the difficulties in the way of a general system of Notification of Infectious Diseases are by no means so great as represented. It is only just to say that the medical men in Birmingham have displayed as great liberality of view in this matter as those of any town in England, if not greater. Without compulsion of any kind, they have to a large extent shown themselves willing to assist the Sanitary Authority in coming to a knowledge of the existence of preventable disease, and it is reasonable to believe that they would willingly fall in with a proposal for universal notification were they only protected from

Importance of early information as to Infectious Diseases.

Notification of Infectious Diseases.

Notification of
Infectious
Diseases
continued.

the consequences by the ægis of a parliamentary enactment. The difficulties are imaginary rather than real, and are based on various grounds: on the natural objection of people to being compelled to do anything; on false notions of professional duty; on sentiment; on erroneous conceptions of what constitutes the duty and the liberty of the subject; and on some others more or less invalid.

That the objections, however, have no solid foundation is proved by the experience of between twenty and thirty towns in the United Kingdom, where a Compulsory Notification law is already in operation, and where such objections, strongly urged before the application of compulsory powers, have been proved after the event to have been unfounded.

Many cases of a dangerously infectious character, others involving great danger to the patient himself from his being kept during his illness surrounded by the conditions which produced it, more especially cases of Diphtheria and Typhoid Fever, have either not been reported at all, or not till after the disease had gone through nearly its whole natural course, or, in some cases, not until a copy of the register of death was supplied by the Registrar.

Notification of
Diseases Bill.

Last year a Bill was introduced by Mr. Hastings, Sir Trevor Lawrence, Dr. Farquharson, and Mr. Brinton, to provide for the better Notification of Infectious Diseases, but owing to the pressure of parliamentary business it could not be proceeded with. The Bill is about to be re-introduced with the same object, but certain modifications.

The following is a copy of the Bill.

A.D., 1883.

A BILL

TO PROVIDE FOR THE BETTER NOTIFICATION OF INFECTIOUS DISEASES.

WHEREAS it is desirable to provide for early notification to sanitary authorities of the occurrence of infectious diseases within their districts:

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows; (that is to say,)

Short title.

1. This Act may be cited for all purposes as the Infectious Diseases Notification Act, 1883.

Construction
of Act.

2. This Act shall be read and construed with the Public Health Act, 1875, 38 & 39 Vict., c. 55, and the Metropolis Local Management Act, 1855, 18 & 19 Vict., c. 120, and any Acts amending the same.

Definitions.

3. "Infectious disease" shall include small-pox, cholera, typhus, typhoid, scarlet, relapsing, continued and puerperal fever, scarlatina, and diphtheria, and such other disease as the sanitary authorities under the provisions and for the purposes of this Act may from time to time declare to be infectious.

"Sanitary authority" shall mean in the metropolis vestries and district boards as constituted under the provisions of the Metropolis Management Act, 1855, and in all other parts of England the local authority as constituted under the Public Health Act, 1875.

4. In order to secure that due notice be given to a sanitary authority of any inmate of any building used for human habitation who is suffering from any infectious disease the following provisions shall take effect; (that is to say,)

Notice to be given of persons suffering from Infectious Disease.

1. If any such inmate be suffering from any infectious disease the occupier or the person having the charge, management, or control of such building (or if such occupier or person be prevented by reason of such disease, then the person in charge of such inmate) shall, so soon as he shall become aware of the existence in any such inmate of any such disease, forthwith give notice thereof to the medical officer of health at his office;
2. If such inmate be not a member of the family of such occupier or person the head of the family (resident in such building) to which such inmate belongs, or if there be no such head, or if such head be prevented by illness, then such inmate (unless prevented by reason of such disease or of youth) shall on becoming aware of the existence in such inmate or in his own person, as the case may be, of such disease forthwith give notice thereof to such occupier or person;
3. The sanitary authority shall provide and supply gratuitously to every registered medical practitioner resident or practising in the district, who shall apply for the same, forms for the certificate or declaration to be made by such medical practitioner of the particulars hereinafter mentioned in relation to such cases, according to the form set forth in the Schedule to this Act;
4. Every medical practitioner attending on or called in to visit such inmate shall, on becoming aware that such inmate is suffering from any infectious disease, forthwith fill up, sign, and deliver, or send to the medical officer of health at his office a certificate or declaration stating according to the form so prescribed, the name of such inmate, the situation of such building, the name of such occupier or person, and the nature of the infectious disease from which, in the opinion of such medical practitioner, such inmate is suffering;
5. The sanitary authority shall pay to every registered medical practitioner who shall, in pursuance of this section, duly make and give any such certificate or declaration, a fee of *two shillings and sixpence* for each such certificate or declaration in respect of cases occurring in his private practice, and a fee of *one shilling* for each such certificate or declaration in respect of cases occurring in his practice as a medical officer to any public body or institution;
6. And any person who shall wilfully offend against this enactment shall for every such offence be liable to a penalty not exceeding *forty shillings*

5. The sanitary authority may from time to time, by resolution on the report of the medical officer of health, and approved by the Local Government Board, order that any infectious disease other than those specifically mentioned in this Act shall be deemed to be an infectious disease within and subject to the provisions of this Act.

Other diseases may be declared to be within the foregoing provisions.

1. Any such order of the sanitary authority may be permanent or temporary only, and if temporary the period during which it is to continue in force shall be specified therein, and the sanitary authority shall give public notice of the order by publishing the same by advertisement in two of the local newspapers circulating in the district, and after such public notice has been given, the provisions of this Act shall, so long as the order continues in force, apply to the disease specified therein in like manner in all respects as if the disease were an infectious disease specifically mentioned in this Act;

2. The production of the newspapers containing a copy of the resolution shall be conclusive evidence that public notice of the order has been so given ;
3. The sanitary authority shall immediately after any such order shall have been made send a copy thereof to any registered medical practitioner residing in the district, but the omission to send any such copy shall not affect the validity of such order.
6. Every sanitary authority shall take means to make this enactment generally known by affixing notices of the contents thereof in all public places where such notices are usually affixed within the district of such authority.
7. This Act shall not apply to Ireland.
8. This Act shall come into operation on the *first day of October one thousand eight hundred and eighty-three*.

Sanitary
Authority to
make enactment
known.

Act not to apply
to Ireland.

Commence-
ment.

SCHEDULE

FORM OF NOTICE.

NOTIFICATION OF INFECTIOUS DISEASES ACT, 1883.

1. Here state
the name.
2. Here state
the number and
name of Street,
or description
of House.
3. Here insert
the name of
Disease.

"I hereby certify and declare, in pursuance of the above-named Act
that ¹ living at No. ² Street,
is suffering from infectious disease, viz., ³
Dated the day of 188

Registered medical practitioner,
or householder, or person in charge, as the case may be.

To the sanitary authority of the district of ."

On perusing the Bill it will be noticed that though drawn mainly upon the lines of the one introduced in 1882, it is found to present several important points of difference. Clause 1 of section IV makes it obligatory that the occupier or person having the control of any building where any inmate shall be suffering from any infectious disease, shall forthwith give notice thereof to the Medical Officer of Health, at his office, and clause 2 of the same section provides that in cases not covered by the 1st clause, the head of the family of such building, or even the inmate himself, if he be not prevented by his disease, or by youth, shall so transmit a report. In the Bill introduced in the previous year no such provisions were made, the onus of reporting lying on the medical practitioner alone.

The new Bill also provides that the Sanitary Authority may from time to time, with the approval of the Local Government Board, order that any infectious disease, other than those specified in the Act, shall be included within the scope of the measure, and that any such order may be either permanent or temporary.

In the Bill introduced last year no fee was recommended to be paid to the Medical Officers of Public Institutions, while that shortly to be brought before the notice of the House of Commons provides for such officers a fee of one shilling. The Bill of 1882 also proposed that not more than one fee should be paid to the same medical practitioner for any certificate given by him in respect of any infectious disease occurring in the same building, within thirty days of the date of the said certificate; the Bill now proposed contains no such provision, but provides that the medical attendant shall be paid two shillings and sixpence for every case reported. The maximum penalty for non-compliance with the Act, which was £5 in the late Bill, is now fixed at forty shillings.

Fee for notification.

ii. *The causes, origin, and distribution of disease*, have constantly occupied the leading share of attention, as from their great importance they properly claim to do. The disease referred to is, of course, that of an infectious character, and more particularly those varieties of it which from their nature admit of successful interference, such as diphtheria, scarlatina, and typhoid fever. Efforts have been directed to obtaining the earliest and fullest information of the existence of cases, to the discovery and removal of any structural defects, the improvement of drainage, isolation of the patient, either with or without removal to Hospital, disinfection of houses, clothes, and persons, advice as to intercourse with neighbours, and attendance at school, notices to the various schools of the existence of disease affecting either scholars or members of the household to which such scholars belong, to the supervision of trades and callings, by means of which the spread of infection was likely to occur, such as tailoring, dressmaking, milk selling, retail trades generally, laundry work, and mangling.

Causes, origin, and distribution of Disease.

Schools and Infectious Diseases.

Trades and Infectious Diseases.

iii. *Advice to the Sanitary Authority on matters affecting the public health.* Among the various questions coming under this head, the principal one is that of the effacement of the Burial Ground of the Old Meeting House, in Old Meeting Street, and the necessary exhumation and removal of the human remains lying there, which have been rendered necessary by the extension of the London and North Western Railway Company's Station.

Advice to the Sanitary Authority.

Old Meeting House Burial Ground.

On March 11th, 1882, I met Dr. Hoffman, Medical Inspector of the Burial Acts Department of the Home Office, and conferred with him and the Trustees of the Old Meeting upon the dis-interment of the remains. Dr. Hoffman approved of the means I suggested for obviating nuisance or injury to health by effluvia, and I am glad to be able to report that the whole operations were conducted without any ill effects under the direction of the Borough Surveyor.

Old Meeting
House Burial
Ground
continued.

The number of remains was very considerable; Mr. Till states that "as nearly as could be ascertained, the remains of 1,778 bodies were removed in 1,515 shells, of which 1,503 were sent to Witton Cemetery, 5 to Edgbaston Church, and 7 to Kingswood Chapel." The last interment took place only a year before the removal.

Outbreaks of
Infectious
Diseases.

iv. *Outbreaks of Infectious, Contagious, or Epidemic Diseases. Small Pox.* During the first quarter of the year not a single case of this infectious malady was reported to me. An explosion, however, occurred in May, the disease being imported from West Bromwich, Hill Top, and Derby. The disease continued to rage at Wednesbury, Dudley, Walsall, and other parts of the Black Country, and owing to the extensive communication between this town and that district, isolated cases continued to occur, particularly in the north-western portion, or that part of the Borough in closest contiguity to, and most extensive communication with, South Staffordshire.

An outbreak occurred at the Deaf and Dumb Asylum in the Spring of the year, but the cases were immediately removed to the Borough Hospital, and the disease was speedily stamped out. The origin of the infection could not be traced.

Unwholesome
Food.

v. *Examination of, and action in regard to, suspected, diseased, or unwholesome food.* During the year 1881 286 seizures of meat unfit for human food were made.

Detailed particulars of this branch of sanitary work may be found in Table V.

Diseased Meat
cases.

Among the Meat cases the following are worthy of notice:—

Charles Harris, 24, Newtown Row; from this man's shop 120 pieces of pork and beef were seized on the 26th April, 1882; they were diseased and unfit for human food. The case was heard on the 12th May, when Harris was fined £20 and costs, which amounted to £3 10s., or in default three months' imprisonment. Not paying the fine he was sent to prison.

John Pinfield, Smithfield Yard, had in his possession on the 5th May, what is technically called a "slink" calf, which he offered for sale as human food although it had been put aside avowedly for another purpose. The case came on for hearing on the 16th May, when the accused pleaded poverty as his excuse. He was fined £5, and costs 16s.

William Hardwick, 251, Summer Lane, was found in possession, on the 9th June, of 56 pieces of beef, which were seized by Inspector Latham. He was summoned by Mr. Bircckley, Superintendent of Markets, on June 23rd, and on the evidence of Inspector Latham, Dr. Bostock Hill, and Mr. Parker, was fined £10, and costs £1 5s.

Mr. Carter prosecuted, and Mr. Dorsett defended. The latter pointed out, as extenuating circumstances, that defendant was away from home when the meat was brought, and that he had hitherto borne a good character.

Diseased Meat
Cases
continued.

Mr. Lowe said the Bench considered the case a very bad one. It was made worse by the fact that defendant, or any other butcher, when meat was brought to them of a doubtful character, could call in the Inspector to pass it or condemn it, and so save themselves trouble, expense, and disgrace.

William Hardwick, 251, Summer Lane, was again brought up on the 28th October, before Messrs. W. M. Ellis, F. B. Goodman, and J. Deykin, charged with exposing for sale 150 pieces of beef in a state unfit for human consumption. According to the evidence of Inspector Latham, Dr. Hill, the Medical Officer of Health and Mr. Parker, Veterinary Surgeon, the animal had not been slaughtered but had died of disease, and was dangerous for use as human food. Mr. Dorsett defended, but in spite of the evidence he adduced to rebut the charge, the Bench pronounced the case a very bad one. Defendant having been fined £10 and costs for a similar offence on the 10th of July, he would now be fined £20 and costs, with the alternative of three months' imprisonment with hard labour.

The fine was quickly subscribed by the man who consigned the meat, and by other friends in court.

vi. *Duties under Sanitary Bye-Laws and Regulations.* These refer to Slaughter Houses, Milk Shops, Cow Sheds, Dairies, Common Lodging Houses, and Houses let in Lodgings.

The Common Lodging Houses numbered at the close of the year 107, and possessed accommodation for 2,274 lodgers; they have received 12,083 visits, 8,930 of which were made by day and the remainder by night.

Common
Lodging
Houses.

The number of Houses let in Lodgings registered under the Public Health Act, 1875, is 211, the number of lodgers permitted being 1,093, and the average number of lodgers in each house, 5.1. These houses are only visited in the daytime, night visits not being required.

Houses let in
Lodgings.

SLAUGHTER-HOUSES.

The number of these in the Borough at the end of the year was 270, of which 138 were licensed, and 132 registered.

Slaughter-
houses.

At the end of last year there were 282 Slaughter-houses in the Borough, of which 157 were licensed, and 128 registered. The licensed slaughter-houses are thus seen to be nineteen fewer, while those registered are four more in number.

The diminution in the number of Slaughter-houses is due to several licenses not having been taken out again, and to several dilapidated properties having been pulled down.

DAIRIES, COW SHEDS, AND MILK SHOPS.

Dairies, Cow
Sheds, and
Milk Shops.

The report of Mr. Birkley, Superintendent of the Markets, shows that during last year 3,201 visits were made to the registered Milk Shops in the Borough, to see that the places used for the storage of milk were suitable ones, and were maintained cleanly and in proper order. The Cow Sheds were visited on 1,198 occasions, so as to ascertain that the owners of these sheds were duly complying with the bye-laws for regulating them.

The Inspector appointed to carry out these duties reported that he invariably found both the Dairies and Cow Sheds in a satisfactory state.

Public
Abattoir.

The reduction in the number of private Slaughter-houses is a step in the right direction, and I believe it is the policy of the Markets and Fairs Committee, having in view the early establishment of a public abattoir, to restrict the number as nearly as possible to the actual requirements of the trade.

Ten years ago, when, in my first Report, I pointed out the desirability of a public abattoir, the number of private slaughter-houses was 301, so that the number has been reduced by 10 per cent. As the population has increased to the extent of nearly 15 per cent. in the same period, it is evident that many more of these insanitary, inconvenient, and dangerous buildings were authorised than were actually necessary.

In each of my previous Annual Reports, I have taken occasion to urge the advantages of a public abattoir; there is one, however, to which I have not made reference, and that is the pecuniary profit derivable from such an institution—an advantage which every one will appreciate however unable he may be to realise the more abstract ones. When in Edinburgh a short time ago, I took the opportunity of examining the public abattoir there, and although it has been in existence thirty years, it is remarkably well arranged. Dr. Littlejohn, the able and courteous Medical Officer of Health of the city, spoke in the highest terms of its influences and value, as measured by the very large quantity of unwholesome meat arrested in its necessary passage through it, and the very handsome annual income derived from it.

CANAL BOATS ACT, 1877.

Canal Boats'
Act

Forty-five boats were registered during 1882 under the provisions of the above Act. Twenty persons were summoned and convicted during the year for non-compliance with its provisions.

vii. *Offensive Trades.* The list of offensive trades, which does not include private slaughter-houses, remains much the same as in the year 1881. Their nature and number are shewn in the following list :—

Tripe Dressing ...	70	Tanning ...	3
Varnish Boiling ...	15	Vegetable Charcoal Burning	3
Chemical Manufacture..	10	Chemical Manure Manufacture...	2
Tallow Chandling ...	8	Blood Refining ...	1
Dog Meat Boiling ...	5	Offal Boiling ...	1
Gut Cleaning ...	5		
Horse Slaughtering ...	4		
Bone Boiling ...	3	Total ...	133
Leather Dressing ...	3		

Complaints, many in number, but affecting only two of them, have been received during the year; in the one case of a Varnish manufactory, in the other of a Tin-stripping works. The proprietor of the former has on each occasion abated the nuisance on representation. In the latter case, although I have several times visited the works and also placed them under the observation of the District Inspector, no serious nuisance has been detected.

viii. *Fortnightly Reports of the Medical Officer of Health to the Health Committee.* I have reported to your Committee, at each of its meetings, on various subjects, including the following :—

Fortnightly
Reports of
Medical Officer
of Health.

1. The general health of the Borough, including the total death-rate, Zymotic death-rate, and average age at death.
2. The occurrence of Infectious disease, and the results of the investigation of certain of the most dangerous cases.
3. The Waters supplied from shallow wells and by the Corporation.
4. Articles of Food, Drink, and Drugs obtained for analysis.
5. Diseased and unwholesome Food.
6. Reports on special questions in pursuance of resolutions, instructions, and otherwise.

BOROUGH HOSPITAL.

This Institution has received during the year 627 cases of Scarlet Fever and 105 cases of Small Pox, against 333 cases of Scarlet Fever, and 17 of Small Pox in the previous year. The

Borough
Hospital.

Borough
Hospital
continued.

number of cases treated in the Hospital in each quarter since the last of 1874 is given below :—

Cases admitted each year.	DATE.			Small-Pox.		Scarlatina.		Total Cases.
	1874.							
	4th Quarter	...	...	194	...	—	...	194
	(2nd Nov. to the end of the year)							
	1875.							
	1st Quarter	...	...	186	...	—	...	186
	2nd "	...	...	169	...	—	...	169
	3rd "	...	...	53	...	13	...	66
	4th "	...	...	12	...	7	...	19
	Totals	...	...	420	...	20	...	440
	1876.							
	1st Quarter	...	...	2	...	1	...	3
	2nd "	...	...	2	...	4	...	6
	3rd "	...	...	2	...	5	...	7
	4th "	...	...	5	...	28	...	33
	Totals	...	...	11	...	38	...	49
	1877.							
	1st Quarter	...	...	4	...	20	...	24
	2nd "	...	...	19	...	7	...	26
	3rd "	...	...	15	...	13	...	28
	4th "	...	...	—	...	3	...	3
	Totals	...	...	38	...	43	...	81
	1878.							
	1st Quarter	...	...	3	...	13	...	16
	2nd "	...	...	4	...	34	...	38
	3rd "	...	...	6	...	139	...	145
	4th "	...	...	7	...	238	...	245
	Totals	...	...	20	...	424	...	444
	1879.							
	1st Quarter	...	...	1	...	60	...	61
	2nd "	...	...	—	...	37	...	37
	3rd "	...	...	3	...	40	...	43
	4th "	...	...	—	...	47	...	47
	Totals	...	...	4	...	184	...	188
	1880.							
	1st Quarter	...	...	2	...	45	...	47
	2nd "	...	...	3	...	27	...	30
	3rd "	...	...	8	...	36	...	44
	4th "	...	...	3	...	62	...	65
	Totals	...	...	16	...	170	...	186

1881.								Cases admitted each year <i>continued.</i>
1st Quarter	...	...	...	8	...	36	...
2nd "	...	...	...	8	...	79	...
3rd "	...	...	...	1	...	91	...
4th "	...	...	...	—	...	127	...
Totals	17	...	333	...	350
1882.								
1st Quarter	...	...	...	—	...	90	...
2nd "	...	...	...	54	...	120	...
3rd "	...	...	...	38	...	197	...
4th "	...	...	...	13	...	220	...
Totals	105	...	627	...	732

A comparison of the number of cases of Scarlet Fever admitted during 1881 and 1882, shows that in the latter year the number of admissions was nearly 90 per cent. higher than in the preceding year. This increase is nearly identical with that observed in the fatality of the disease during the same two years.

With regard to Small Pox, while only 17 cases were received into the Hospital during 1881, in the year under review the admissions reached the comparatively high figure of 105; the majority of these were sent in during the second quarter of the year.

It has often been alleged against the establishment of Hospitals for the treatment of Infectious Diseases, that they constitute centres of infection and a danger to the neighbourhood, and though this contention has been disproved over and over again, and is always in process of being disproved both in Birmingham and other towns, it continues like many other popular errors to maintain its existence as if it were an established and important truth. It may be well, therefore, to state in reference to the Borough Hospital, which has been so serviceable, that in no single instance has any case occurred in the neighbourhood of the Hospital which could be traceable to it, and that, on the contrary, its vicinity has been nearly as free from Infectious Diseases as many other parts of the town; the fact, however, that the site in Rotton Park Ward is nearest the Black Country where Small Pox has long been prevalent, and from which many persons come daily to work in the Ward, some of whom have been proved to have introduced the infection answerable for many of the cases, is sufficient to account for those that have occurred, and it is, therefore, perfectly reasonable to conclude that but for such importation only a very small minority of the cases, if any, would have existed in this part of the town.

The Hospital
not a source of
danger to the
neighbourhood.

**Rules for
management of
the Hospital.**

A consideration of the Rules affecting the internal management of the Borough Hospital resulted in your Health Sub-Committee requiring me to revise and submit them to you; accordingly, in conjunction with Mr. Bates, Surgeon to the Institution, I made certain changes which your Sub-Committee approved, and copies of the amended Rules have been placed in the wards and other appropriate positions. The following is a transcript of these Rules, which seem to fulfil their object in a very satisfactory manner, but it has since been found necessary to add one prohibiting smoking in the sick wards. The rules in reference to the discharge of patients from the Hospital, published in my last Annual Report, complete the code under which the management of the Institution is conducted.

BOROUGH HOSPITAL.

RULES TO BE OBSERVED BY THE MATRON.

Matron.

1. The Matron shall visit each of the Wards daily, and shall see that the chambers, offices, beds, bedding, linen, and all things within her department are kept clean and in good order; and shall enforce strict attention on the part of the Nurses to the personal cleanliness of the Patients, and to the instructions of the Surgeon.

2. She shall not be absent from the Hospital for more than twenty-four hours without the permission of the Committee.

3. She shall superintend the distribution of all articles of Food and Clothing required by Patients and Nurses in the Hospital, and shall be responsible for the storage and condition of all such articles.

4. She shall see that the Patients' meals are provided and given to them with regularity, and at the following hours, viz :—

Breakfast ...	...	...	...	at 8 a.m.
Dinner ...	...	...	...	at 1 p.m.
Tea ...	...	...	...	at 6 p.m.

all extras being supplied according to the directions of the Surgeon.

5. She shall keep an accurate account of all diets ordered; of the consumption of provisions for Officers, Servants, and Patients, separately; and shall also keep an account of stores made up to the end of each week, and be prepared to deliver the same to the Committee for examination, when required.

6. She shall be responsible for the removal from the Ward of the body of any Patient within one hour after death, and shall immediately give notice to the relatives or friends of the deceased.

7. She shall appoint and discharge all Nurses and other Servants, and shall report any alterations in the Staff, with the reasons for the same, to the Committee at their next meeting.

8. She shall perform all such other duties as the Committee may from time to time direct.

BY ORDER OF THE HEALTH COMMITTEE.

BOROUGH HOSPITAL.

RULES TO BE OBSERVED BY THE NURSES AND OTHER SERVANTS.

1. The Nurses shall maintain good order in their Wards, and report to Nurses and the Matron any breach of the laws, or of decorum or discipline. They shall other Servants obey the orders of the Surgeon and Matron.

2. The Head-Nurses shall commence their duties at eight o'clock in the morning, and remain on duty until relieved by the Night Nurses.

3. The Under-Nurses shall commence their duties at half-past six o'clock in the morning, and remain on duty till nine in the evening.

4. The Night Nurses shall be on duty between the hours of nine o'clock in the evening and eight o'clock in the morning. They shall, on commencing their duties, receive from the Day Nurses an account of the Patients entrusted to their care, and each morning report to the Matron any irregularities which may have occurred during the night.

5. The Nurses shall take care that their respective Wards and the furniture and utensils therein are kept clean and in good order; they shall see that each Patient is washed every morning before breakfast, and they shall assist such Patients as may be unable to wash themselves.

6. They shall administer the medicines and distribute the diets, according to directions; they shall take care that there is no waste of provisions, coal, gas, or other articles, in their respective Wards; and shall on no account allow liquors or provisions of any sort to be brought into the Hospital without the knowledge or permission of the Surgeon or Matron.

7. They shall, on the death of a Patient, give immediate notice thereof to the Matron, and remove the body from the Ward within an hour.

8. They shall not receive any friends into their rooms without the permission of the Matron; and such friends shall not be permitted to enter any of the Wards.

9. They shall severally be responsible to the Matron for the reception of clothing and bedding into their respective Wards, and the return of such clothing and bedding to the Stores.

10. The Nurses and other servants shall be permitted to go out on leave of absence for half-a-day once every week, such day being fixed by the Matron.

11. All Nurses and other servants shall be in bed by ten o'clock at night.

12. All Nurses and other servants shall be engaged and discharged by the Matron, subject to one month's notice on either side.

13. The Nurses and servants generally shall perform any such duties as may be required of them.

BY ORDER OF THE HEALTH COMMITTEE.

BOROUGH HOSPITAL.

RULES TO BE OBSERVED BY THE PATIENTS.

Patients.

1. All Patients shall observe the directions of the Surgeon, Matron, and Nurses.
2. No male Patient shall go into the Women's Wards, nor female Patient into the Men's Wards, without leave of the Matron.
3. No Patient shall use spirituous liquors other than those prescribed by the Surgeon. No spirituous or other liquors shall be brought into the Hospital by Patients or their friends.
4. They shall not create any disturbance; and any Patient using improper language, or behaving indecently, shall be reported to the Matron.
5. The Patients who are able to work shall assist in doing such work as the Matron shall direct.
6. Patients dissatisfied from any cause may complain to the Health Committee.
7. Any Patient who wishes to receive the spiritual assistance of any minister of religion, may mention such wish to the Nurse of the Ward, who shall immediately communicate the same to the Matron, in order that the Minister specified by the Patient may be apprised thereof.

BY ORDER OF THE HEALTH COMMITTEE.

BOROUGH HOSPITAL.

RULES REFERRING TO THE DISCHARGE OF PATIENTS.

Discharge of Patients.

1. That no inmate be discharged till desquamation be complete and that particular attention be paid to the scalp and the feet. That the foot-bath be used frequently during convalescence.
2. That in addition to the series of baths, in which carbolic soap should be used, the Patient be bathed the evening before and on the morning of discharge. It is advisable to rub the Patient, before dressing, with carbolic oil of one per cent. strength.
3. That the disinfected and pure clothes be deposited by the Porter in the bath-room or separate dressing-room, and be put on by either the Patient himself, or by the Nurse dressed in a clean cotton dress.
4. That the Patient in leaving, go away from the bath-room direct.
5. Children, on the morning of their discharge from the Ward, should be carried in a clean blanket to the bath-room.
6. That all Patients shall be discharged under the superintendence of the Surgeon and the Matron, the Surgeon at the same time to make a record of the discharge.
7. The Matron's servant to bathe and dress children and superintend the bathing of the women on their discharge, and to have no communication with Patients in the Wards.
8. That the Porter superintend the bathing, anointing, and dressing of the male adult Patients, such cases to be attended to previous to his undertaking any duties in connection with the Wards for that day.

BOROUGH HOSPITAL.

RULES TO BE OBSERVED BY THE VISITORS.

1. No Visitor can be allowed to enter the Wards without permission **Visitors.**
from the Surgeon or Matron.
2. Visitors are allowed to see Patients through the Windows on Sundays between the hours of four and five only.
3. Not more than two persons can be admitted at a time to see the same Patient.
4. No Visitor shall remain for more than half-an-hour, or any shorter period that may be directed.
5. No article for consumption shall be given to a Patient, unless approved of by the Surgeon or Matron.
6. No Children can on any account be admitted as Visitors.
7. Any Visitors using bad language, creating a disturbance, or otherwise misconducting themselves, will be liable to forfeit the above mentioned privilege.

BY ORDER OF THE HEALTH COMMITTEE.

The following circular letter was sent to the members of the medical profession, reminding them of the Hospital provision for small pox and scarlet fever cases and the terms for notifying the same. **Circular Letter to the Medical profession.**

BOROUGH OF BIRMINGHAM.

Health Department,
The Council House,
May 16th, 1882.

Dear Sir,

On several occasions notice has been sent to the members of the medical profession in reference to the admission of infectious diseases into the Borough Hospital, and to the disinfection of clothing, etc., but, as there seems to be still some misunderstanding, or want of a clear comprehension of the matter, we beg to remind you—

1.—That cases of Small Pox and Scarlet Fever *only* are received into the Hospital, and this on the certificate of a qualified medical practitioner, to the effect that the patient is fit and willing to be removed. The certificate should specify the name, age, and address of the patient, and the nature of the disease, and should be sent either to the Medical Officer of Health at the Council House, or direct to the Hospital, if it be more convenient, and to the Hospital only between mid-day on a Saturday and the following Monday morning.

The fee for each certificate is five shillings; a similar fee is paid for the early notification of cases of Small Pox and Scarlet Fever, on the understanding that the medical attendant shall use his influence to obtain the removal of the patient to the Hospital.

2.—A Special Ambulance is provided for each disease.

Circular Letter
continued.

3.—The medical attendant is at liberty to visit and treat his patient in the Hospital.

4.—Disinfection of clothing, bedding, etc., is done on application, and the articles are both fetched and returned in vehicles specially devoted to the purpose.

We venture with confidence to request your co-operation in the work referred to, and remain,

Dear Sir,

Yours faithfully,

WILLIAM COOK,

Chairman of the Health Committee.

ALFRED HILL, M.D.,

Medical Officer of Health.

DISINFECTING STATION.

Disinfecting
Station.

A much larger number of articles has been purified at the Borough Station than in 1881. The increased use made of the Station is in a very great measure attributable to the augmented number of cases of Scarlet Fever reported this year.

ARTICLES DISINFECTED.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
Beds	56	115	466	221	128	181	452
Mattresses	113	126	290	339	229	358	517
Sheets... ..	48	346	424	192	73	164	557
Blankets	92	103	353	241	113	290	556
Counterpanes	37	68	262	154	70	121	264
Pillows and Bolsters ...	185	315	899	586	317	481	940
Other Articles...	141	330	4,282	2,645	1,632	1,940	4,920
Totals	672	1,403	6,976	4,378	2,562	3,535	8,206

Cost of Station.

The estimated cost of the Station last year is as follows:—

	£	s.	d.
Wages	135	4	0
Horse-keep, Shoeing, &c. ...	48	0	0
Gas for Heating and Lighting..	20	4	8
Coal	3	4	1
Water	2	0	0
	<u>£208</u>	<u>12</u>	<u>9</u>

The expenditure is about £8 more than last year, owing principally to the larger consumption of gas necessitated by the extra amount of disinfecting work done.

MORTUARIES.

So many as 111 bodies have been taken to these Institutions during the year, against 72 in 1881.

The number deposited in each Station during the last seven years has been as follows:—

	1876.	1877.	1878.	1879.	1880.	1881.	1882.
Moor Street ...	3	32	32	28	15	13	30
Duke Street ...	1	12	10	11	12	9	17
Kenion Street ...	—	8	10	14	10	25	22
Ladywood Road ...	—	13	5	12	7	17	17
Moseley Street ...	—	—	—	6	8	8	25
Totals ...	4	65	57	71	52	72	111

WATER SUPPLY.

The covering in of the Monument Road Reservoir has been completed, and has resulted in a very marked improvement in the color and condition of the water stored there. It is also intended, I understand, to proceed soon in a similar manner with the Hagley Road Reservoir. Such protection as is thus afforded from impurities, and even from the action of light, is necessary for the preservation in a pure and presentable condition of water stored for drinking, particularly in the neighbourhood of large towns.

The chemical quality of the town supply has preserved the position which it attained to last year, but it has been delivered in a better condition as regards colour and freedom from turbidity, showing improved means of storage and filtration. On several occasions I have heard remarks from consumers on the improved appearance of the water supplied.

During the year I analysed 264 samples of well water; they were, as hitherto, with few exceptions extensively polluted with sewage matter, and thereby rendered dangerous and therefore unfit for drinking. The owners of these wells were invited to attend before your Health Sub-Committee, and in most cases consented to close them without further measures being taken.

I have also made thirty-four analyses of miscellaneous articles.

PUBLIC BATHS.

It is satisfactory to note that, notwithstanding the absence of great summer heat, the number of bathers at the baths provided by the Corporation shows an increase over that for 1881.

Baths
continued.

RETURN OF THE NUMBER OF BATHERS AT EACH OF THE
CORPORATION BATHS FOR THE LAST NINE YEARS.

KENT ST.				WOODCOCK ST.			NORTHWOOD ST.		
	Men.	Women	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1874	77138	4796	81934	47317	1889	49206	80801	2899	83700
1875	105162	4931	110093	73341	2055	75396	100858	2827	103685
1876	107647	4880	112527	76781	2451	79232	99941	2832	102773
1877	95428	4397	99825	58432	2012	60444	83844	2153	85997
1878	106820	6016	112836	64680	2171	66851	101059	2129	103188
1879	105395	7274	112669	48794	1501	50295	82408	2027	84435
1880	108253	8468	116721	71843	2051	73894	115446	3166	118612
1881	115260	8768	124028	64014	1762	65776	106550	2704	109254
1882	112141	8509	120650	66272	2015	70287	113036	4049	117085

SEWERAGE WORKS.

Sewerage
Works.

During the year under notice $2\frac{1}{4}$ miles of Sewers were constructed by the authority of the Town Council, whilst 730 yards of Sewers hitherto belonging to the Corporation were abandoned, owing to alterations in the Improvement area and the extension of New Street Railway Station. Sewers were also laid in several undeclared highways.

Total length of
Sewers.

The total length of Sewers at present under the control of the Corporation is about $181\frac{1}{2}$ miles.

STREETS AND ROADS.

Streets and
Roads.

At the end of last year there were $197\frac{1}{2}$ miles of Streets and Roads in the Borough, of which $179\frac{1}{2}$ miles were maintained by the Corporation, and a little more than one mile by the Little Bromwich Authorities and the Harborne Local Board. There are in addition 10 miles of Streets, completed and under the charge of the Borough Authorities not formerly declared Public Highways, and there still remain 7 miles of Highways in an unfinished state.

NIGHTSOIL AND REFUSE DISPOSAL.

Midden Privies.

The midden privies are still being slowly abolished, and privies on the pan system substituted for them.

Pans.

The total number of pans in the Borough at the close of 1882 was 35,743. In the Interception Department 1,757,222 pans and 70,504 loads of ashes were collected during the year, while from the midden privies 75,477 loads of nightsoil were removed during the same period.

It is computed that there are between nine and ten thousand water closets in the Borough, and that there remain 15,013 midden privies. Water Closets.

The

SANITARY WORK

of the Borough continues to be energetically pushed forward, 1,965 drains having been cleared from obstruction, 1,723 ash-pits and privies put in order, 1,277 houses, where certain zymotic diseases have occurred, have been disinfected, 750 sink drains have been disconnected from the sewer, and 818 yards paved. Sanitary Work.
The work done also comprises the trapping of 1,652 drains, the removal of 1,302 deposits of wash, manure, &c., and the closing of five houses certified by me as unfit for human habitation.

Full details of the work of the Inspection Department are to be found in Table V, on pages 60 and 61.

It gives me much pleasure again to express my obligations to your Committee, my colleagues, and the general staff of officers, for continued kindness and assistance in the performance of my duties.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

Medical Officer of Health.

III. APPENDIX.

(TABLES, MAP, AND CHART.)

TABLE I.
BIRTHS AND DEATHS (GROSS NUMBERS).

DATE.	BIRTHS.	DEATHS.
1882	14,866	8,425
1881	14,869	7,938
1880	15,111	8,088
1879	15,846	8,650
1878	15,964	9,662
1877	16,001	9,038
1876	15,816	8,330
1875	14,862	9,668
1874	14,888	9,665
1873	14,497	8,990
1872	14,123	8,048
Average of Ten years } 1872—1881	15,197	8,808

NOTES.

- 1.—Population at Census, 1871, 343, 787.
- 2.—Population, estimated to the middle of the Year 1882, 408,532.
- 3.—Area in Acres, 8,400.
- 4.—Number of Inhabited Houses in Borough at Census 1871, 68,532.
- 5.—Average number of Persons in each House at Census, 1871, 5.0.

TABLE II
ANNUAL RATE OF MORTALITY, DEATH-RATE AMONG CHILDREN, AND DEATHS IN PUBLIC INSTITUTIONS.

DATE.	Annual rate of Mortality per 1,000 Living.	Deaths of Children under 1 year; percentage to total Deaths.	Percentage of Deaths of Children under 1 year to Registered Births.	Deaths of Children under 5 years; percentage to total Deaths.	Percentage of Deaths in Public Institutions to total Deaths.
1882	20.6	29.1	16.5	47.2	15.4
1881	19.7	27.7	15.0	47.1	15.3
1880	20.5	32.1	17.8	49.9	12.4
1879	21.8	27.5	15.0	49.7	14.1
1878	25.2	28.6	17.0	53.1	11.8
1877	23.9	29.1	16.4	49.4	12.2
1876	22.4	30.5	16.0	46.6	11.6
1875	26.3	30.6	19.6	49.4	11.8
1874	26.8	27.8	17.8	47.5	11.8
1873	24.8	29.2	18.1	49.2	11.6
1872	23.1	29.1	16.6		12.0
Average of 10 years 1872-1881 }	23.4	29.2	16.9		12.5

TABLE III.

Mortality from certain classes of Diseases, and proportions to population and to 1,000 deaths in 1882.

CLASS OF DISEASES.	Total Deaths.	Death Rate per 1,000 of the population.	Proportion of Deaths to 1,000 Deaths.
1—Seven principal Zymotic Diseases	1,413	3·4	168
2—Pulmonary (other than Phthisis)	1,676	4·1	199
3—Tubercular 	997	2·4	118
4—Wasting Diseases of Infants ...	800	2·0	95
5—Convulsive Diseases of Infants...	522	1·3	62

NOTES.

- 1.—Includes Small-Pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhoea.
- 3.—Includes Phthisis, Scrofula, Rickets, and Tabes.
- 4.—Includes Marasmus, Atrophy, Debility, and Premature Birth.
- 5.—Includes Hydrocephalus, Infantile Meningitis, Convulsions, and Teething.

TABLE IV.

SHOWING THE NUMBER OF DEATHS IN THE TEN YEARS, 1872 TO 1881, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES,
AND THE NUMBER IN 1882.

	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	Annual average of 10 years, 1872-1881.	Proportion of deaths to 1,000 1872-1881.	1882.	Proportion of Deaths to 1,000 Deaths in 1882.
Small-Pox ...	298	125	637	174	0	8	5	0	2	6	125	14.3	17	2.0
Measles ...	44	123	139	141	87	309	54	169	63	132	126	14.3	150	17.8
Scarlet Fever ...	409	587	737	265	204	237	995	306	123	164	403	45.7	256	30.4
Diphtheria ...	82	107	74	55	58	52	83	71	51	57	69	7.8	49	5.8
Whooping Cough ...	263	169	242	438	189	369	455	384	217	362	309	35.1	319	37.9
Fever ...	188	203	201	204	147	144	147	87	84	66	147	16.7	87	10.4
Diarrhæa ...	640	728	622	868	651	457	682	234	784	341	601	68.2	535	63.5
TOTAL ...	1,924	2,042	2,652	2,145	1,336	1,576	2,421	1,251	1,324	1,128	1,780	202.1	1,413	167.8
London ...	12,699	11,385	11,230	13,411	12,565	10,292	14,734	12,216	13,661	13,811	12,600	177.1	13,583	170.3

TABLE V.

SUMMARY OF NUISANCES AND OTHER MATTERS REPORTED AND WORK ACCOMPLISHED BY THE OFFICERS AND MEN EMPLOYED DURING THE YEAR ENDED DECEMBER 31ST, 1882.

(Reported by Mr. T. H. DALE, Inspector of Nuisances).

	Nuisances Reported.	Nuisances Abated.
Nuisances remaining on the Books Dec.. 31st, 1881 ...	2,229	—
Defective Drains requiring opening and clearing from obstruction	2,341	1,965
„ Spout Drains	346	288
„ Drains not efficiently trapped	1,454	1,652
„ Sink Drains requiring disconnection from the Sewer	748	750
Nuisances arising from the want of drains	88	107
„ „ „ the want of an efficient supply of wholesome water	25	37
„ „ „ the keeping of fowls	819	745
„ „ „ an accumulation of water in cellars	125	129
„ „ „ the filthy condition of privies	71	108
„ „ „ foul and defective urinals	402	371
„ „ „ the overcrowding of houses	31	31
„ „ „ the want of efficient ventilation	14	13
Swine and Swine Styes so kept as to be a nuisance ...	110	116
Houses reported unfit for human habitation	11	5
Houses disinfected, cleansed, and purified, where Zymotic disease has occurred	1,370	1,277
Filthy and unwholesome Houses requiring cleansing and whitewashing	1,228	1,201
Accumulations of wash, deposits of offensive matter, manure, &c.	1,330	1,302
Foul Ashpits and Privies requiring repairs	1,735	1,723
Houses where the privies and ashpits belonging thereto are so foul and defective as to require re-construction	377	280
Back Yards requiring paving	759	818
Number of Privies limewashed by our own men	981	981
„ Courts or Back Yards	255	255
„ Dangerous Premises reported to the Borough Surveyor's Department	341	311
„ Defective Water Taps and Standpipes reported to the Water Department	453	473
No. of Cases still on the Books under notice		2,056
Totals	17,643	17,643
Number of Notices issued for the abatement of Nuisances during the Year ended December 31st, 1882 ...	8,708	
Number of Cases Summoned	258	
„ „ Convicted	238	
„ „ Withdrawn	20	
Amount of Costs	£22 12 6	
„ Penalties	26 12 0	
	£49 4 6	

TABLE V.—*Continued.*

WELL WATERS.

Well Waters submitted by the Inspector for Analyses	...	...	264
No. of Wells closed	...	...	260
„ Premises supplied with Tap Water	...	...	254
„ Persons dealt with by the Magistrates	...	..	12
Amount of Costs	...	...	£1 8 0

COMMON LODGING HOUSES.

Number of Houses Registered...	...	...	107
„ Lodgers allowed in the Houses	...	...	2,274
„ Visits by day	...	...	8,930
„ Visits by night	...	...	3,153

HOUSES LET IN LODGINGS.

Houses Registered under the Public Health Act, 1875	...	...	211
Number of Lodgers allowed	...	...	1,093

SMOKE NUISANCES.

No. of Registered Proprietors of Furnaces or Fireplaces used for manufacturing purposes	...	...	...	1,280
No. of Chimneys	...	...	...	1,671
No. of Notices served for the abatement of Nuisances	...	...	...	101
No. of Observations of Chimneys made by the Inspectors...	...	...	...	7,195
No. of Manufacturers reported for the emission of dense smoke	...	...	...	173
Manufacturers Cautioned	...	...	...	88
„ Summoned	...	...	...	76
„ Convicted	...	...	...	76
Amount of Penalties	...	...	...	£59 15 0
„ Costs	...	...	...	32 17 0
Total	...	...	...	£92 12 0

SLAUGHTER HOUSES.

(Return made by MR. BIRCKLEY, Superintendent of the Markets).

No. of Slaughter-Houses	...	...	...	...	270
No. of Visits	...	...	...	...	14,326
Seizures of Bad Meat	...	...	...	...	286
Weight Destroyed	...	...	...	...	58,732 lbs.
Seizures of Fish, &c.	...	...	...	...	96

CONTAGIOUS DISEASES (ANIMALS) ACT.

(Return made by MR. BIRCKLEY, Superintendent of the Markets).

No. of Visits to Milk Shops	...	...	...	...	3,201
No. of Visits to Railway Stations	...	...	...	...	1,563
No. of Visits to Cow Houses	...	...	...	...	1,198

TABLE VI.

METEOROLOGICAL CONDITION OF THE AIR, AND AMOUNT OF RAINFALL
FOR THE YEAR ENDING DECEMBER 30TH, 1882.

Observed at 9.0 a.m. at The Hollies, Winson Green, by myself and Dr. A. BOSTOCK HILL.

The cistern of the Barometer is 476 feet above the mean level of the sea.

The other Instruments are about 473 feet above the mean level of the sea.

1882. MONTHS.	Pressure of Air.	TEMPERATURE OF THE AIR.				RAINFALL. Gauge 1 foot diameter. Receiving surface 3ft. sin. above the ground.		
	Barometer	Reading of Thermometer.				Depth of Rain depo- sited upon a square foot of surface, in inches and parts.	Measure- ment converted into weight per Acre.	Number of Days on which Rain fell, when 5/100ths of an inch or more was measured.
	Mean Weekly Reading (corrected and reduced to 32 degrees Fahrenheit)	Highest in Shade.	Lowest in Shade.	Range of Tempe- rature in the Month.	Mean Tempe- rature in the Month.			
	In. Parts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	In. Parts.	Tons.	
January ...	29.817	53.5	30.0	23.5	40.5	2.41	243	7
February ...	29.694	54.0	29.0	25.0	41.9	2.15	217	5
March ...	29.473	63.8	29.5	34.3	45.6	2.57	260	6
April...	29.266	62.0	30.0	32.0	47.0	4.18	422	17
May' ...	29.549	68.5	34.5	34.0	52.9	3.19	322	11
June ...	29.398	68.0	42.0	26.0	55.7	4.00	404	15
July ...	29.339	76.0	47.5	28.5	60.0	3.83	387	14
August ...	29.423	78.5	47.0	31.5	59.2	2.48	251	12
September ...	29.377	67.5	34.0	33.5	53.7	3.03	306	9
October ...	29.341	65.5	33.0	32.5	48.9	6.61	668	15
November ...	29.185	58.0	28.0	30.0	42.0	4.56	461	18
December ...	29.147	55.0	16.0	39.0	37.8	4.59	464	18

PRICES OF COAL, FLOUR, POTATOES, AND BUTCHERS' MEAT,
AND THE NUMBER OF PAUPERS RELIEVED IN THE PARISH OF BIRMINGHAM
DURING THE YEAR ENDED MICHAELMAS, 1882.

Years:	Average Prices of Food and Fuel.				PAUPERISM.	
	Coal per ton.	Flour per 224lbs.	Potatoes per ton.	Butchers' Meat per lb.	Weekly Average of Paupers relieved during the Year.	
					In-door.	Out-door.
1882	9/9	29/10	75/-	Beef -/5 $\frac{3}{4}$ Mut'n -/8 $\frac{1}{4}$	2,355	4,886
1881	9/4	26/10	71/-	Beef -/5 $\frac{3}{4}$ Mut'n -/8	2,596	4,767
1880	10/-	27/-	75/-	-/6 $\frac{5}{8}$	2,415	4,825

RAINFALL AND TEMPERATURE IN EACH MONTH AND YEAR FROM 1872 TO 1882.

MONTH.	1872.		1873.		1874.		1875.		1876.		1877.		1878.		1879.		1880.		1881.		Average for 10 years 1872—1881		1882.													
	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.	Rainfall.	Temperature. No. of days on which 5-100ths of an inch or more was measured.														
January ...	4.75	21	40.4	4.48	19	41.4	1.86	10	41.4	3.12	16	44.4	1.75	6	36.1	4.47	18	42.8	1.96	11	43.2	2.01	10	32.4	0.69	3	33.7	0.96	4	23.4	2.60	12	38.4	2.41	7	40.5
February ...	3.41	15	43.8	1.76	11	35.1	2.68	9	38.2	1.68	10	36.0	2.55	14	39.6	2.43	12	44.5	1.11	8	40.1	3.68	18	38.5	3.12	16	41.0	3.43	13	36.3	2.59	13	39.3	2.15	5	41.9
March ...	2.37	12	44.0	2.66	14	39.9	1.72	16	44.6	0.81	5	40.7	3.16	22	40.8	2.72	15	40.3	1.17	9	43.6	0.95	9	40.7	0.53	3	41.7	2.37	11	41.0	1.85	12	41.7	2.57	6	45.6
April ...	3.92	10	47.6	0.77	7	46.6	1.45	5	50.5	1.09	7	47.2	1.98	13	47.5	2.82	12	45.0	2.17	11	48.3	3.39	16	43.6	2.35	7	46.0	0.78	3	44.3	2.07	19	46.7	4.18	17	47.0
May ...	2.27	11	49.3	2.54	12	50.6	3.24	7	50.5	2.10	12	54.1	1.00	5	48.1	2.27	9	48.2	5.33	21	54.7	4.26	13	50.1	1.62	6	50.6	1.48	7	53.9	2.61	10	51.1	3.19	11	52.9
June ...	5.77	15	58.3	1.65	9	58.2	1.13	5	58.5	3.91	15	58.0	2.23	8	58.0	2.96	10	59.0	3.37	14	60.8	6.16	19	56.0	2.55	17	56.2	1.74	15	57.9	3.15	13	58.1	4.00	15	55.7
July ...	0.56	11	65.0	5.16	11	62.3	1.26	8	64.0	8.14	13	58.9	1.42	6	63.7	5.03	12	59.8	0.98	7	63.7	3.97	18	59.0	4.80	20	59.8	1.66	9	62.5	3.60	11	61.9	3.83	14	60.0
August ...	3.81	10	60.3	3.44	18	61.1	1.99	14	60.1	1.80	7	62.0	1.22	5	62.7	2.29	10	61.6	6.44	18	62.0	5.72	13	60.1	0.80	4	60.9	5.18	16	57.4	3.27	11	60.8	2.48	12	59.2
September ...	3.65	8	57.0	2.13	8	53.4	4.54	19	56.4	3.89	14	59.3	5.83	21	55.7	4.58	13	54.9	3.15	13	56.9	3.59	12	55.6	4.63	10	58.7	1.65	9	54.4	3.66	13	56.2	3.03	9	53.7
October ...	4.65	19	47.1	1.86	9	47.8	2.71	12	51.2	7.21	16	47.4	2.26	9	53.0	1.91	12	49.1	3.66	16	52.2	2.06	9	49.6	6.38	11	44.0	3.17	11	45.2	3.50	12	48.6	6.61	15	48.9
November ...	3.47	18	44.3	1.83	10	43.0	1.45	10	41.6	3.31	10	41.9	2.94	8	43.4	2.87	15	47.4	3.15	11	39.4	1.98	12	40.9	2.30	9	40.1	3.13	16	47.3	2.64	12	42.9	4.56	18	42.0
December ...	4.50	17	41.1	0.97	5	41.3	4.38	16	33.9	1.45	10	39.1	5.68	19	42.9	2.40	11	41.3	2.44	11	31.2	1.07	5	35.3	3.48	13	41.7	3.40	9	37.9	2.98	13	38.6	4.59	18	37.8
Year ...	45.13	167	49.8	29.25	133	48.6	28.41	131	49.0	38.51	135	49.1	32.02	136	49.4	36.75	149	49.1	34.93	150	49.6	38.84	154	46.8	33.25	119	48.0	28.95	123	47.2	34.61	141	48.8	43.60	147	48.8

TABLE VII.

NEW CASES OF DISEASE COMING UNDER TREATMENT DURING THE YEAR ENDING
DECEMBER 30TH, 1882, AT THE FOLLOWING INSTITUTIONS, &c.

DISEASES.	I. General Hospital.	II. General Dispensary	III. Queen's Hospital.	IV. Children's Hospital.	V. The Work- house.	VI. Out-door Pauper Patients.	VII. Boro' Hosptl.	TOTAL.
Small Pox	3	...	2	...	...	8	105	118
Measles	48	40	8	20	28	207	...	351
Scarlet Fever.....	60	44	6	136	3	112	627	988
Diphtheria .....	...	4	3	2	...	2	...	11
Whooping Cough ...	50	65	8	855	15	100	...	1,093
Croup	3	5	...	29	4	5	...	46
Diarrhœa	1,926	99	576	980	115	392	...	4,088
Dysentery .....	...	...	...	...	...	1	...	1
Asiatic Cholera .....	...	...	...	...	...	...	...	...
Erysipelas	24	19	49	18	29	36	...	175
Continued Fever ...	...	...	2	...	...	...	...	2
Typhus .....	...	..	...	...	...	...	...	...
Enteric or Typhd.	17	40	29	8	7	2	...	103
Relapsing .....	...	..	...	...	...	...	...	...
Febricula	71	26	21	134	...	456	...	708
Ague	1	...	...	...	...	...	...	1
Rheumatic Fever ...	50	134	58	25	...	27	...	294
Puerperal Fever ...	1	7	1	...	...	1	...	10
Bronchitis & Catarrh	815	642	585	1,666	670	2,117	...	6,495
Influenza	1	9	...	1	...	..	...	11
Pleurisy & Pneumonia	142	60	61	81	72	47	...	463
Phthisis	278	680	420	56	177	175	...	1,786
Constit. Syphilis.....	221	137	190	155	317	46	...	1,066
All other diseases ...	14,753	13,356	7,875	9,412	3,418	4,449	...	53,263
Accidents	13,044	166	7,880	34	166	60	...	21,350
Totals.....	31,568	15,533	17,774	13,612	5,021	8,243	732	92,423

The above returns are made by (I.)—Bertram C. Windle, Esq., M.B. and H. Gilbert Barling, Esq., M.B.; (II.)—Sydney W. Haynes, M.B., D. Holmes, M.B., and G. P. Best, M.B., Esqs.; (III.)—J. H. Vinrace, Esq., and F. Vinrace, Esq., M.D.; (IV.)—Dr. Alice J. S. Ker; (V.)—Walter Bowen, Esq., Clerk to the Guardians; (VI.)—A. B. Simpson, Esq., L.R.C.S., Surgeon to the Workhouse; (VII.)—Wm. Bates, Esq., B.A., M.R.C.S., Surgeon to the Borough Hospital.

TABLE IX.—WATER: RESULTS OF ANALYSES

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1882. CORPORATION SUPPLY.					
Jan. 12th	3 Court, Milk Street	7°·2	30·30	·277	·042
Feb. 6th	83, Cambridge Street	7°·7	27·98	·136	·024
Mar. 7th	28 Court, Clark Street	8°·8	29·16	·112	·017
Apr. 12th	Drover's Arms, Bradford Street ...	11°·1	24·16	·245	·051
May 8th	19 Court, Weaman Street	12°·8	26·66	·152	·107
June 2nd	27, Ladywood Road	15°·0	29·66	·105	·042
July 11th	9 Court, Benacre Street	16°·6	23·66	·274	·062
Aug. 3rd	63, Holloway Head	16°·6	24·04	·149	·015
Sept. 6th	74, Aberdeen Street	13°·9	31·14	·102	·009
Oct. 2nd	55, Dartmouth Street	13°·9	21·50	·169	·020
N ov. 7 h	8 Court, Ellen Street	10°·0	23·90	·255	·048
Dec. 6th	Back 215, Monument Road	9°·0	29·48	·238	·041
	Average Results ... 1882...	7°·9	29·15	·175	·028
	" " ... 1881...	10°·8	26·98	·185	·029
	" " ... 1880...	10°·3	26·02	·205	·036
	" " ... 1879...	8°·2	25·34	·215	·040
	" " ... 1878...	10°·8	26·75	·220	·050
WELL WATERS.					
Jan. 3rd	Back 143, Golden Hillock Road ...	...	86·60	...	very large
" "	139, Golden Hillock Road, and house occupied by Mr. Fear, Bolton Road .....	...	58·60	...	large
" "	43 and 44, Herbert Road .....	...	134·40	...	"
" "	2 and 3 Courts, Hope Street (Typhoid) ...	...	170·80	...	...
" "	Back 223, Bolton Road .....	...	94·40	...	large
" "	2 Court, Barr Street West (Scarlet Fever) ...	...	122·40	...	...
" 9th	Melbourne Place, Bridge St. West	...	81·60	...	very large
" "	Geelong Place and Alma Terrace, Bridge Street West (Whooping Cough) .....	...	93·60	...	...
" "	452 and 453, Coventry Road .....	...	89·40	...	very large
" "	3 Court, Saltley Street (Measles) ...	...	149·80	...	...
" 10th	395 and 396, Bristol Road .....	...	124·40	...	rather large
" 13th	40 and 42, Priestley Road .....	...	80·60	...	large
" "	44 and 45, Priestley Road .....	...	88·60	...	"
" 12th	81 and 82, Bristol Road .....	...	100·40	...	"
" "	Back 205 and 206, Icknield Port Road .....	...	141·00	...	moderate
" 10th	244, Sherlock Street .....	...	159·40	...	...
" 18th	12 Court, Dymoke Street (Scarlet Fever) ...	...	120·60	...	large
" "	13 Court, Dymoke Street (Scarlet Fever) ...	...	159·60	...	...
" 25th	54—59, Cranemore Street .....	...	131·60	...	...
" "	38—42, George Street .....	...	99·60	...	very large
" "	31 and 32, Lee Crescent .....	...	64·40	...	large
" 31st	Alma Place, Hawkes Street (Measles) ...	...	129·60	...	...
" "	32 and 34, Hawkes Street .....	...	127·40	...	...

EXPRESSED IN PARTS PER 100,000.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation. Estimated	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total	
·001	·066	·109	350	1·4	10°·3	11°·5	21°·8	Very slightly turbid
·003	·330	·356	3,000	2·1	2°·5	10°·2	12°·7	Clear, yellowish green
·004	·484	·504	4,550	1·9	7°·4	9°·0	16°·4	Very slightly turbid, greenish
·003	·165	·218	1,350	1·3	4°·0	8°·4	13°·0	Turbid, greenish
·003	·242	·251	2,125	1·8	6°·9	8°·1	15°·0	Turbid, greenish
·002	·198	·241	1,670	1·2	2°·7	11°·4	14°·1	Turbid, greenish
·002	·044	·107	130	1·7	9°·3	7°·7	17°·0	Very turbid, yellowish green
·002	·308	·324	2,770	1·9	1°·5	11°·1	12°·6	Slightly turbid, greenish
·002	·242	·252	2,110	1·5	6°·3	10°·8	17°·1	Clear, blue
·0	·099	·119	670	1·6	8°·7	6°·3	15°·0	Clear; greenish yellow
·005	·286	·338	2,580	1·6	4°·4	10°·6	15°·0	Slightly turbid; greenish yellow
·003	·297	·340	2,670	1·8	7°·4	10°·6	18°·0	Clear, greenish
·003	·227	·266	1,970	1·7	6°·8	9°·2	16°·0	
·003	·252	·283	2,220	1·7	7°·6	7°·8	15°·4	
·003	·279	·317	2,470	1·7	7°·7	7°·0	14°·7	
·004	·236	·279	2,070	1·8	8°·9	6°·7	15°·6	
·003	·217	·269	1,870	1·8	9°·2	8°·2	17°·4	
·006	·44	·445	4130	4·5	...	...	...	Clear
·010	1·54	1·548	15160	3·6	...	...	...	Clear
·002	6·05	6·051	60190	9·1	...	...	...	Clear
1·030	3·52	4·367	43350	19·0	...	...	...	Clear
·005	7·15	7·154	71220	4·4	...	...	...	Clear
·050	3·30	3·341	33090	12·6	...	...	...	Clear
·009	1·98	1·987	19550	9·5	...	...	...	Clear
·170	1·21	1·350	13180	10·2	...	...	...	Clear
·003	1·98	1·982	19550	6·1	...	...	...	Clear
·075	5·50	5·562	55300	11·9	...	...	...	Clear
·006	2·64	2·645	26130	6·3	...	...	...	Clear
·004	2·42	2·423	23920	5·4	...	...	...	Turbid, dirty inky black in two foot tube
·005	3·63	3·634	36020	4·8	...	...	...	Very turbid, greenish in two foot tube
·002	1·10	1·101	10690	4·9	...	...	...	Clear
·004	6·27	6·273	62410	18·4	...	...	...	Clear
·800	5·72	6·380	63480	16·0	...	...	...	Clear
·001	1·76	1·761	17290	10·6	..	...	...	Clear
·135	2·20	2·311	22790	13·9	...	...	...	Clear, with many suspended particles
·027	3·96	3·988	39560	10·5	...	...	...	Clear, with many suspended particles
·004	1·54	1·543	15110	5·4	...	...	...	Clear, with many suspended particles
·002	2·09	2·091	20590	6·4	...	...	...	Turbid
·022	4·62	4·638	46060	7·0	...	...	...	Clear
·030	5·17	5·194	51620	12·8	...	...	...	Clear

TABLE IX.—

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1882.	WELL WATERS—(continued.)				
Jan. 31st	78 and 80, Hawkes Street.....	...	157·40	...	very large
" "	67 and 69, Muntz Street .....	...	83·60	...	large
" "	1 Court, Adelaide Street .....	...	87·40	...	very large
" "	2 Court, Adelaide Street .....	...	177·40	...	...
Feb. 9th	28 and 29, Upper Gough Street ...	...	175·60	...	...
" "	17 and 18, Grant Street.....	...	121·40	...	very large
" "	215—224, Lodge Road .....	...	95·40	...	rather large
" "	4—7, Radnor Street .....	...	60·60	...	moderate
" 13th	Lincoln Villa, Grange Road .....	...	91·60	...	"
" "	1 and 2, Park Villas, Grange Road, (Scarlet Fever) .....	...	104·80	...	small
" 15th	45 and 46, Northbrook Street .....	...	74·60	...	large
" "	248 and 249, Heath Street .....	...	113·40	...	...
" "	250 and 251, Heath Street .....	...	57·40	...	small
" "	57—61, Alston Street.....	...	125·60	...	moderate
" 20th	Back 206, Bristol Street .....	...	179·80	...	...
" 22nd	200 and 201, Bordesley Green .....	...	132·60	...	very large
" "	40 and 42, Green Lane .....	...	165·40	...	"
" "	37 and 38, Glover's Road .....	...	85·40	...	"
" "	Albert Place and Perseverance Villa, Bolton Road .....	...	103·60	...	"
" "	26 Court, Clark Street (Typhoid)...	...	130·60	...	"
" "	9 Court, Osler Street .....	...	87·80	...	small
" 27th	7 Court, Garrison Lane (Scarlet Fever) .....	...	239·60	...	...
" "	3 Court, Belmont Passage (Scarlet Fever) .....	...	207·40	...	...
" 28th	220, Pershore Road .....	...	55·40	...	...
" "	285 and 287, Sherlock Street .....	...	116·60	...	...
" "	40 and 41, Ryland Street .....	...	175·60	...	...
" "	99—102, Ladywood Road and Back 96, Friston Street (Scarlet Fever) .....	...	35·80	...	small
Mar. 2nd	31 and 32, Lee Crescent .....	...	77·60	...	moderate
" 9th	101 and 102, Wrentham Street (Whooping Cough).....	...	53·60	...	"
" "	5 Court, Thomas Street (Whooping Cough) .....	...	191·40	...	...
" "	387 and 388, Moseley Road .....	...	110·40	...	very large
" "	39 and 40, Highgate Place (Whooping Cough) .....	...	220·60	...	"
" 15th	26, Belgrave Road .....	...	164·40	...	excessive
" "	Back 75, Hawkes Street .....	...	96·40	...	very large
" "	62—64, Victoria Street (Scarlet Fever) .....	...	122·40	...	...
" "	14 and 15, Oliver Road .....	...	73·60	...	very large
" "	27 Court, Clarke Street (Scarlet Fever) .....	...	89·60	...	large
" "	407 and 408, Monument Road .....	...	194·80	...	rather large
" 22nd	2, Larches Street .....	...	155·60	...	very large
" "	21—26, Larches Street .....	...	139·40	...	"
" "	26 and 27, Gladstone Road .....	...	109·40	...	...
" "	Back 142, Lee Bank Road (Scarlet Fever) .....	...	70·60	...	rather small
" "	17 Court, Lee Bank Road (Scarlet Fever) .....	...	120·60	...	large

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation, Estimated	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total.	
·002	6·38	6·381	63490	12·3	...	...	...	Clear
·004	2·75	2·753	27210	6·9	...	...	...	Clear
·002	3·19	3·191	31590	5·3	...	...	...	Clear
·250	6·60	6·806	67740	17·0	...	...	...	Clear
·120	·77	·868	8360	47·4	...	...	...	Clear
·003	5·28	5·282	52500	15·5	...	...	...	Clear
·001	3·74	3·741	37090	5·8	...	...	...	Clear
·003	1·76	1·762	17300	4·8	...	...	...	Clear
·003	2·53	2·532	25000	5·8	...	...	...	Clear
·004	·88	·883	8510	5·3	...	...	...	Clear
·003	2·97	2·972	29400	4·1	...	...	...	Clear
·580	3·30	3·778	37460	10·0	...	...	...	Clear, residue brown
·009	·55	·557	5250	6·5	...	...	...	Clear
·006	1·54	1·545	15120	16·3	...	...	...	Clear
·120	7·26	7·358	73260	23·4	...	...	...	Clear, residue brown
·003	6·93	6·932	69000	13·4	...	...	...	Clear
·002	9·38	9·381	93490	11·2	...	...	...	Clear
·003	3·85	3·852	38200	7·3	...	...	...	Clear
·005	2·64	2·644	26120	5·2	...	...	...	Clear
·005	5·61	5·614	55820	10·5	...	...	...	Clear
·004	4·40	4·403	43710	8·5	...	...	...	Clear
·030	10·56	10·585	105530	26·0	...	...	...	Clear
·800	4·18	4·846	48140	16·7	...	...	...	Clear
·014	·66	·671	6390	3·2	...	...	...	Clear
·920	2·20	2·957	29250	17·8	...	...	...	Clear
·280	9·24	9·470	94380	21·5	...	...	...	Clear
·003	·88	·882	8500	3·0	...	...	...	Clear
·003	1·76	1·762	17300	13·3	...	...	...	Clear
·004	1·98	1·983	19510	5·1	...	...	...	Clear
1·500	5·17	6·400	63680	16·8	...	...	...	Clear
·006	2·42	2·425	23930	11·8	...	...	...	Clear
·002	8·03	8·031	79990	20·5	...	...	...	Clear
·004	3·74	3·743	37110	12·7	...	...	...	Turbid, yellow
·005	2·42	2·424	23920	8·8	...	...	...	Clear
·035	5·39	5·422	53900	8·5	...	...	...	Clear
·003	2·42	2·422	23900	6·8	...	...	...	Clear
·005	3·19	3·194	31620	8·1	...	...	...	Clear
·004	12·87	12·873	128410	22·4	...	...	...	Clear
·002	4·51	4·511	44790	16·8	...	...	...	Clear
·005	4·95	4·954	49220	11·3	...	...	...	Clear
·280	·99	1·220	11880	7·7	...	...	...	Clear
·002	2·86	2·861	28290	8·8	...	...	...	Clear
·004	5·50	5·503	54710	15·7	...	...	...	Clear

TABLE IX.

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1882.	WELL WATERS—(continued).				
Mar. 22nd	Saint Martin's Place, Saint Luke's Road (Scarlet Fever) .....	...	120·80	...	very large
„ 29th	Middlemore's Cottages, Farm Street	...	106·60	...	„
„ „	38 and 39, Lodge Road .....	...	132·40	...	...
„ „	1—6, Olton Place, Bolton Road ...	...	58·40	...	...
„ „	7—12, Olton Place, Bolton Road...	...	57·60	...	very large
„ „	Back 198 and 199, Bolton Road ...	...	66·60	...	large
„ „	203, Bolton Road .....	...	61·80	...	„
Apr. 4th	160 and 162, Newtown Row.....	...	151·60	...	...
„ „	335 and 336, Monument Road .....	...	105·40	...	very large
„ „	337 and 338, Monument Road .....	...	131·40	...	large
„ 11th	12, Camp Hill .....	...	124·40	...	small
„ 12th	10 Court, Fordrough Street (Scarlet Fever) .....	...	129·60	...	rather large
„ „	332 and 333, Monument Road .....	...	55·40	...	...
„ „	Back 160, Herbert Road (2nd pump)	...	115·60	...	large
„ „	Back 160, Herbert Road (1st pump)	...	117·60	...	very large
„ 13th	Augusta Place, King St. (Typhoid)	...	96·60	...	rather small
„ „	17 and 18, King Street .....	...	170·60	...	rather large
„ „	Montpellier Terrace, Spark Street	...	67·40	...	...
„ „	20 and 21, Montpellier Street .....	...	147·60	...	very large
„ 19th	13 Court Beech St. (Scarlet Fever)	...	80·60	...	...
„ „	The Grove, Noel Road .....	...	141·40	...	large
„ „	25 and 27, Pershore Road.....	...	122·40	...	...
„ „	13—19 Radnor Street.....	...	92·60	...	...
„ 24th	407 and 408, Monument Road .....	...	141·60	...	...
„ „	1 and 2, Wordsworth Road .....	...	112·40	...	moderate
„ „	3 and 4, Wordsworth Road .....	...	113·40	...	„
„ „	Back 43, Hawkes Street .....	...	159·60	...	„
„ „	Back 46, Hawkes Street .....	...	166·60	...	„
May 1st	86 and 88, Saint Luke's Road .....	...	145·50	...	excessive
„ „	48 and 50, Belgrave Road .....	...	149·40	...	...
„ 2nd	4 and 5, Spring Vale .....	...	162·60	...	...
„ „	3 and 4, Holloway Head .....	...	133·40	...	large
„ „	Haverlock Terrace, Villiers Street (1st pump, Measles).....	...	109·90	...	very large
„ „	Haverlock Terrace, Villiers Street (2nd pump).....	...	107·60	...	„
„ 5th	Gray's Buildings, Nursery Road ...	...	108·00	...	„
„ 8th	58 and 59, Neehells Park Rd. (Scarlet Fever) .....	...	189·60	...	...
„ „	2 Court, Ryland Road (Fever) .....	...	101·40	...	...
„ „	33, Sun Street West .....	...	129·40	...	...
„ 11th	3 and 4, Erasmus Road....	...	101·00	...	moderate rather large
„ „	30 and 32, Hickman Road.....	...	58·60	...	...
„ „	34 and 36, Hickman Road.....	...	46·60	...	moderate rather large
„ „	91 and 93, Dolobran Road (Scarlet Fever) ...	...	74·80	...	...
„ 17th	20 and 21, Highgate Place .....	...	115·60	...	very large

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation. Estimated.	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total.	
·003	2.20	2.202	21700	14.2	...	...	...	Clear
·002	2.53	2.531	24990	6.7	...	...	...	Clear
·018	8.25	8.265	82330	14.7	...	...	...	Clear
·025	·66	·680	6480	5.2	...	...	...	Clear
·002	·44	·441	4090	5.6	...	...	...	Clear
·001	·33	·331	2990	3.3	...	...	...	Clear
·002	·33	·331	2990	4.0	...	...	...	Clear
·003	6.71	6.712	66,800	15.2	...	...	...	Clear
·008	5.72	5.726	56,940	9.0	...	...	...	Clear
·006	6.27	6.275	62,530	10.6	...	...	...	Clear
·002	1.54	1.541	15,090	10.4	...	...	...	Clear
·002	4.84	4.841	38,090	15.9	...	...	...	Clear
·015	1.65	1.662	16,300	6.1	...	...	...	Clear
·002	3.19	3.192	32,600	6.4	...	...	...	Clear
·004	4.95	4.952	49,210	9.0	...	...	...	Clear
·003	3.41	3.412	33,900	9.2	...	...	...	Clear
·003	6.71	6.712	66,800	15.2	...	...	...	Clear
·075	1.98	2.042	20,100	3.6	...	...	...	Clear
·003	4.62	4.622	45,900	10.1	...	...	...	Clear
·028	1.54	1.563	15,310	8.5	...	...	...	Clear
·004	1.64	2.642	26,110	8.9	...	...	...	Clear
4.500	2.31	6.000	52,680	18.0	...	...	...	Clear
·017	2.21	1.224	11,920	4.7	...	...	...	Clear
·035	11.11	11.139	111,070	21.6	...	...	...	Slightly turbid, with some floating particles, proving part of a fungus
·003	4.29	4.292	42,600	8.1	...	...	...	Clear
·002	3.08	3.081	30,490	10.0	...	...	...	Clear
·002	7.70	7.701	76,690	15.4	...	...	...	Clear
·001	6.93	6.931	68,990	15.3	...	...	...	Clear
·005	6.60	6.604	65,720	00.4	...	...	...	Clear
2.050	7.48	8.167	81,350	13.5	...	...	...	Clear
·150	1.98	2.103	20,710	29.0	...	...	...	Clear, slightly yellowish
·003	3.96	3.962	39,300	27.3	...	...	...	Clear
·005	4.73	4.734	47,020	8.0	...	...	...	Clear
·008	4.18	4.186	41,540	6.8	...	...	...	Clear
·005	5.28	5.284	52,520	8.8	...	...	...	Turbid
2.100	10.56	12.282	122,500	20.5	...	...	...	Clear
·028	5.94	5.863	59,310	9.5	...	...	...	Clear
·700	5.17	5.750	57,280	11.3	...	...	...	Clear
·003	3.74	3.742	37,100	8.9	...	...	...	Clear
·001	2.42	2.421	23,890	2.6	...	...	...	Clear
·001	·55	·551	5,190	2.7	...	...	...	Clear
·002	·22	·221	2,880	2.1	...	...	...	Clear
·003	2.75	2.752	27,200	6.1	...	...	...	Clear

TABLE IX.—

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1882.	WELL WATERS—(continued).				
May 17th	22 and 23, Highgate Place .....	...	152.40	...	very large
" "	26 and 27, Highgate Place .....	...	158.40	...	large
" "	48—54, Henley Street .....	...	104.60	...	"
" 22nd	Back 132 and 133 Unett Street ...	...	92.40	...	moderate
" "	Back 48—51, Brearley Street West	...	129.60	...	large
" 23rd	Back 203 and 204, Heath Street (Scarlet Fever) .....	...	111.80	...	...
" 26th	10—14, Baker Street, and 153, Grange Road .....	...	104.60	...	large
" "	16 Baker Street, & 150, Grange Rd.	...	92.40	...	large
" "	Back 29, Baker Street .....	...	177.40	...	excessive
" "	31 and 33, Baker Street .....	...	141.00	...	rather
" 30th	93—96, Dartmouth Street ^(Whooping) Cough .....	...	17.60	...	rather
" "	St. Luke's Place, St. Luke's Road	...	165.60	...	small
" "	7 and 9 Courts, Sherlock Street ...	...	216.80	...	very large
June 7th	28, Belgrave Road .....	...	180.60	...	...
" "	9 & 10, Radnor St. (Scarlet Fever)	...	53.40	...	excessive
" "	Mount Place Hockley Hill ^(Scarlet) Fever .....	...	133.40	...	moderate
" 12th	45 and 46, Varna Road .....	...	89.60	...	very large
" "	427—429, Monument Road .....	...	137.60	...	large
" "	42—44, Ledsam Street .....	...	95.69	...	very large
" 13th	535, Park Road .....	...	162.80	...	"
" "	101, Stratford Road .....	...	98.60	...	...
" "	14 Ct. Bordesley Park Rd. ^(Whooping) Cough .....	...	65.40	...	very large
" "	27 and 29, Arthur Street .....	...	91.40	...	"
" 16th	15 and 17, Arthur Street .....	...	59.60	...	rather
" 20th	46 and 48 Harborne Road .....	...	40.60	...	large
" "	13—19 Radnor Street .....	...	75.40	...	small
" 22nd	218, Pershore Road .....	...	58.40	...	moderate
" 23rd	81—89 George Street, Nechells (2nd time) .....	...	111.60	...	large
" "	2—12 Cranemore Street (2nd time)	...	146.60	...	very large
" "	Mr. Hollins' Property, adjoining 4 Court Parker Street .....	...	46.80	...	...
" 27th	22, Golden Hillock Road .....	...	90.60	...	moderate
" "	28, Golden Hillock Road .....	...	102.40	...	...
" "	24 and 26, Goldon Hillock Road (Typhoid) .....	...	126.40	...	large
" "	41 and 42, Icknield Square .....	...	142.60	...	...
July 3rd	4 Court, Hope Street .....	...	168.00	...	...
" "	5 Court, Hope Street .....	...	150.60	...	very large
" "	28 Court, Hope Street .....	...	197.60	...	"
" "	32 Court, Hope Street .....	...	246.80	...	...
" 6th	Mr. Gibbs' Premises, Stratford St.	...	117.80	...	very large
" "	36 and 37, Priestley Road .....	...	112.40	...	...
" "	The Grove, Noel Road .....	...	151.20	...	moderate
" "					large

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation, Estimated	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total.	
.005	5.06	5.064	50,320	15.0	...	...	...	Clear
.003	5.50	5.501	44,700	15.1	...	...	...	Clear
.005	2.20	2.204	21,710	4.1	...	...	...	Clear
.003	5.72	5.722	56,900	15.6	...	...	...	Clear
.004	6.93	6.933	69,010	16.1	...	...	..	Clear
.400	4.73	5.06	50,280	13.8	...	...	...	Clear
.005	4.07	4.074	40,420	5.8	...	...	...	Clear
.003	1.65	1.653	16,200	7.3	...	...	...	Clear
.005	4.84	4.844	48,120	10.1	...	...	...	Clear
.005	5.39	5.394	53,620	10.0	...	...	...	Clear
.002	1.10	1.101	10,690	18.1	..	...	...	Clear
.004	5.17	5.173	51,410	12.3	...	...	...	Clear
1.300	.23	1.290	12,580	28.6	...	...	...	Clear
.003	4.84	4.842	48,100	12.5	...	...	...	Slightly turbid and yellowish
.003	1.65	1.652	16,200	2.6	...	...	...
.001	6.38	6.381	63,490	15.0	...	...	...	Clear
.003	1.76	1.762	27,300	6.1	...	...	...	Clear
.005	6.05	6.054	60,220	9.8	...	...	...	Clear
.009	2.97	2.977	29,450	6.2	...	...	...	Clear
2.400		19.7	19,380	18.1	...	...	...	Very turbid and dirty yellow, dark-brown residue, odour offensive
.006	2.75	2.755	27,230	1.9	...	...	...
.001	.44	.441	4,090	3.8	...	...	...	Clear
.002	2.09	2.091	20,590	8.5	...	...	...	Clear
.002	.66	.661	6,290	3.7	...	...	...	Clear
.005	2.64	2.644	26,120	6.5	...	...	...	Clear
.002	2.09	2.091	20,590	5.0	...	...	...	Clear
.002	.44	.441	4,090	3.4	...	...	...	Clear
.014	3.08	3.091	30,590	4.2	...	...	...	Clear
.035	4.73	4.759	47,270	13.3	...	...	...	Clear, residue brown
.001	1.76	1.761	17,290	5.4	...	...	...	Clear
.020	3.74	3.756	37,240	5.1	...	...	...	Clear
.001	3.19	3.191	31,590	7.2	...	...	...	Clear
.600	5.28	5.774	57,420	14.2	...	..	...	Clear, residue brown
.018	3.19	3.204	31,600	12.1	...	...	...	Clear
.002	5.94	5.941	59,090	21.1	...	...	..	Clear
.009	6.16	6.167	61,350	15.9	...	...	...	Clear
.040	7.37	7.402	73,710	21.3	...	...	...	Clear
.001	9.02	9.021	89,890	21.8	...	...	...	Clear
.310	3.63	3.885	38,530	8.8	...	...	...	Clear
.003	4.62	4.622	45,900	11.3	...	...	...	Clear
.003	3.41	3.412	33,800	9.3	...	...	...	Clear

TABLE IX.

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1882.	WELL WATERS—(continued).				
July 11th	3 Court, Conybere Street (Typhoid)	...	188·80	...	very large
" "	8 Court, Harding Street	...	221·80	...	...
" "	Houses occupied by Mr. Fisher and Mr. Alvey, Stanmore Road.....	...	44·20	...	large
" 13th	187 and 189, Sherlock Street, and 198—201, Gooch Street	...	199·60	...	very large
" 17th	No. 3, and House occupied by Mr. Wilders, Cambridge Crescent ...	...	144·80	...	large
" "	373 and 374, Bristol Road.....	...	110·80	...	large
" "	19 Court, Bellbarn Road (Scarlet Fever).....	...	120·60	...	moderate
" "	41—43, Crab Tree Road (Scarlet Fever).....	...	37·60	...	very large
" 21st	203 & 204 Icknield Port Road (Scarlet Fever).....	...	99·60	...	large
" "	36, Alcester Street	...	343·40	...	large
" 24th	107 and 109, Muntz Street (Whooping Cough)	...	122·40	...	large
" "	73, Hawkes Street	...	154·60	...	large
" "	Paddington Place, Paddington St.	...	151·00	...	large
" 27th	6 Court, Upper Ryland Road (Scarlet Fever).....	...	120·40	...	moderate
" 28th	14—19, Highgate Place.....	...	168·60	...	large
Aug. 1st	2 Court, New John Street.....	...	105·40	...	...
" "	3 Court, New John Street.....	...	150·40	...	...
" 2nd	111 and 112, Great King St. (Scarlet Fever).....	...	119·60	...	...
" "	30—35, Vaughton Street (Typhoid)	...	165·40	...	very large
" "	26 Court, Bridge Street West	...	240·40	...	large
" "	9 and 10, Radnor Street	...	47·60	...	moderate
" "	49 and 50, Lower Hurst St (Diarrhoea)	...	154·80	...	large
" "	1, 2, and 3, Winson Street, in Gardens (Scarlet Fever).....	...	65·40	...	large
" "	Lee Bank Square, Lee Bank Road (Diarrhoea).....	...	57·60	...	large
" 23rd	30 and 31, Hick Street	...	121·40	...	large
" "	Cottage, and No. 51, Oughton Place (Diarrhoea).....	...	97·40	...	very large
" 28th	4 Court, Upper Ryland Road (Scarlet Fever).....	...	151·60	...	large
" "	Back 40, Dymoke Street (Diarrhoea)	...	192·80	...	large
" 29th	84—86, Summer Hill.....	...	50·40	...	rather large
" 30th	3 Court, Deritend (Scarlet Fever)...	...	197·60	...	very large
Aug. 30th	163, Hockley Hill	...	84·40	...	...
" "	2 & 3 Courts, Vere Street (Typhoid)	...	200·40	...	excessive
Sept. 7th	3 Court, New John Street West	...	172·00	...	large
" "	18 Court, Geach Street	...	104·60	...	large
" "	South Terrace, South Road (Diarrhoea)	...	206·80	...	large
" "	Linden Terrace, South Road.....	...	112·40	...	...
" 11th	7 & 8 Courts, Kent St. North (Small- pox)	...	149·60	...	...
" 12th	103, Pershore Road	...	92·40	...	small
" "	19 Court, Lee Bank Road (Scarlet Fever).....	...	120·40	...	large
" 19th	22, Bristol Road	...	67·60	...	...
" "	183 and 185, Bristol Road.....	...	71·80	...	rather large

TABLE IX.—

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation, Estimated	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total.	
·005	2·86	2·864	28,320	17·1	...	...	...	Clear
·420	4·62	4·966	49,340	31·7	...	...	...	Clear
·002	·44	·441	4,090	2·8	...	...	...	Clear
·003	1·54	1·542	15,100	50·1	...	...	...	Clear
·002	4·40	4·401	43,690	6·9	...	...	...	Clear
·002	3·52	3·521	34,890	6·4	...	...	...	Clear
·003	5·61	5·612	55,800	13·8	...	...	...	Clear
·001	·33	·331	2,990	3·8	...	...	...	Clear
·002	5·83	5·83	58,080	13·4	...	...	...	Clear
·005	13·75	13·754	137,220	31·2	...	...	...	Clear
·003	5·17	5·172	51,400	8·7	...	...	...	Clear
·004	4·40	4·403	43,710	13·1	...	...	...	Clear
·001	1·76	1·761	17,290	9·0	...	...	...	Clear
·002	4·62	4·621	45,890	12·7	...	...	...	Clear
·002	4·51	4·511	44,790	13·4	...	...	...	Clear
·270	3·52	3·743	37,110	8·5	...	...	...
·600	7·15	7·630	75,980	15·8	...	...	...
·630	5·94	6·459	64,270	18·6	...	...	...	Clear
·003	6·38	6·382	63,500	8·1	...	...	...	Clear
·001	1·87	1·871	18,390	24·5	...	...	...	Clear
·003	1·10	1·102	10,700	2·8	...	...	...	Clear
·002	·66	6·661	6,290	28·0	...	...	...	Clear
·004	2·64	2·643	26,110	6·1	...	...	...	Clear
·003	2·31	2·312	22,800	8·0	...	...	...	Clear
·003	2·75	2·752	27,200	7·3	...	...	...	Clear
·002	1·76	1·761	17,290	6·8	...	...	...	Clear
·002	7·92	7·921	78,890	18·3	...	...	...	Clear
·002	3·30	3·301	32,690	13·0	...	...	...	Clear
·004	·22	·223	1,810	4·5	...	...	...	Clear
·003	7·04	7·042	70,100	18·6	...	...	...	Clear
·022	2·64	2·658	26,260	15·5	...	...	...	Clear
·002	5·83	5·831	57,990	18·5	...	...	...	Clear
·006	6·38	6·385	63,530	22·1	...	...	...	Clear
·004	3·30	3·303	32,710	11·4	...	...	...	Clear
·002	2·31	2·311	22,790	20·3	...	...	...	Clear
·030	1·98	2·004	19,720	8·1	...	...	...	Clear
·550	5·61	6·063	60,310	17·2	...	...	...	Clear (nearly), with some large suspended particles.
·003	3·30	3·302	32,700	5·4	...	...	...	Clear
·002	5·28	5·281	52,490	19·1	...	...	...	Clear
·450	trace	·371	3,390	7·4	...	...	...	Clear
·002	·88	·881	8,490	4·4	...	...	...	Clear

continued.

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1882.	WELL WATERS.				
Sept. 21st	17 and 18, Reservoir Retreat.....	...	48·60	...	large
" "	121 and 122, Spring Hill, and No. 2, Eyre Street .....	...	135·40	...	moderate
" "	Beacon Cottages, Lansdowne Street	...	77·40	...	moderate
" "	44 and 46, Dudley Road .....	...	140·60	...	large
" 26th	Houses occupied by Chambers and Jackson, Fawdry's Buildings, Dudley Road .....	...	51·60	...	rather small
" "	Back 496, Dudley Road.....	...	67·40	...	small
" "	76 and 77, Wellington Street .....	...	53·40	...	large
" "	Clent Villa, Hertford Place, Dudley Road .....	...	47·60	...	large
Oct. 2nd	33, Grantham Road .....	...	92·60	...	rather large
" "	64, Gladstone Road .....	...	80·40	...	"
" "	444 and 445, Coventry Road.....	...	92·40	...	small
" "	10 and 11, Rodway Street.....	...	88·60	..	"
" 5th	220 and 221, Nechells Park Road	...	105·60	...	...
" "	5 and 6 Courts, Nelson Street South (Scarlet Fever) .....	...	120·40	...	very large
" 6th	133, Conybere Street .....	...	103·40	...	"
" 10th	83-87, Bell Barn Road (Scarlet Fever.) .....	...	113·60	...	moderate
" "	5 Court, Parker Street .....	...	91·90	...	...
" "	10 Court, Parker Street .....	...	73·40	...	...
" 12th	2 Court, Ford Street .....	...	95·60	...	large
" "	5—9, Ford Street .....	...	123·40	...	"
" "	49 Court, Bell Barn Road (Typhoid)	...	90·40	...	moderate
" "	17, Pershore Road .....	...	146·60	...	...
" 16th	30 Court, High Street, Bordesley...	...	190·80	...	moderate
" "	133 and 134, High Street, Bordesley	...	205·40	...	large
" 19th	Roadside Pump, bottom of Chad Rd.	...	38·40	...	"
" "	Montague House, Montague Road	...	34·60	...	moderate
" "	Back 45, Crab Tree Road (Scarlet Fever.) ...	...	45·00	...	rather small
" 20th	50 and 51, Ludgate Hill .....	...	350·60	...	...
" "	196 and 197, Warstone Lane .....	...	227·80	...	very large
" "	60—62, Spencer Street, and 21—25, Northampton Street.....	...	120·40	...	"
" 25th	8 Court, Ford Street .....	...	125·60	...	...
" "	53 and 54, Whitmore Street .....	...	141·40	...	very large
" "	121 and 122, Lodge Road .....	...	25·40	...	moderate
" "	123 and 124, Lodge Road .....	...	59·00	...	large
" 30th	Back 27, Wright Street .....	...	55·60	...	...
" "	147 and 149, Green Lane .....	...	68·40	...	very large
" "	Cottage, Hay Mill Brook Farm (Scarlet Fever) .....	...	18·40	...	excessive
" 31st	248, Pershore Road .....	...	165·60	...	very large
Nov. 2nd	67 and 68, Larches Street.....	...	151·60	...	"
" "	69 and 70, Larches Street (Diarrhoea)	...	109·40	...	"

continued.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation. Estimated	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total.	
·006	2·64	2·645	26,130	6·1	...	...	...	Clear
·003	2·53	2·532	25,000	35·9	...	...	...	Clear
·003	3·30	3·302	32,700	7·8	...	...	...	Clear
·002	6·93	6·931	68,990	17·8	...	...	...	Clear
·002	3·85	3·850	38,180	5·3	...	...	...	Clear
·001	3·19	3·191	31,590	8·7	...	...	...	Clear
·003	1·43	1·432	14,000	4·1	...	...	...	Slightly turbid.
·002	1·87	1·871	18,390	4·7	...	...	...	Clear
·0	2·20	2·200	21,680	7·6	...	...	...	Clear
·001	1·87	1·871	18,390	5·4	...	...	...	Clear
·001	1·87	1·871	18,390	7·0	...	...	...	Clear
·001	2·75	2·751	27,190	9·8	...	...	...	Clear
1·600	6·15	7·477	74,450	12·8	...	...	...	Clear
·007	2·75	2·755	27,230	11·2	...	...	...	Clear
·003	1·65	1·652	16,300	25·9	...	...	...	Clear
·004	5·06	5·063	50,310	10·1	...	...	...	Clear
·025	1·76	1·780	17,480	9·4	...	...	...	Clear
·140	1·65	1·765	17,330	8·0	...	...	...	Clear
·004	3·08	3·083	30,510	12·1	...	...	...	Clear
·003	6·38	6·382	63,500	12·8	...	...	...	Clear
·004	2·86	2·863	28,310	13·2	...	...	...	Clear
·480	2·97	3·365	33,330	11·2	...	...	...	Clear
·003	5·06	5·062	50,300	20·1	...	...	...	Clear
·001	4·51	4·511	44,790	23·8	...	...	...	Clear
·003	2·31	2·312	22,800	3·5	...	...	...	Clear
·004	1·43	1·433	14,010	5·5	...	...	...	Muddy
·002	·11	·111	790	4·2	...	...	...	Slightly turbid
·800	3·96	4·620	45,880	104·6	...	...	...	Slightly turbid
·005	18·37	18·374	183,420	33·9	...	...	...	Clear
·006	7·59	7·595	75,630	17·0	...	...	...	Clear
·027	7·70	7·722	76,900	16·3	...	...	...	Clear
·005	3·08	3·084	30,520	12·5	...	...	...	Clear
·004	·99	·993	9,610	4·8	...	...	...	Clear
·007	1·87	1·876	18,440	5·9	...	...	...	Clear
·048	1·54	1·579	15,470	4·3	...	...	...	Clear
·009	1·65	1·657	16,250	8·2	...	...	...	Clear
007	·11	·116	840	0·9	...	...	...	Turbid, greenish
·003	2·64	2·642	26,100	9·7	...	...	...	Clear
·005	7·70	7·704	76,720	16·2	...	...	...	Clear
·004	5·50	5·503	54,710	11·1	...	...	...	Clear

TABLE IX.

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1883.	WELL WATERS—(continued).				
Nov. 2nd	407 and 408, Moseley Road (Fever)	...	149·40	...	large
„ 7th	20 and 21, Gladstone Road .....	...	108·60	...	very large
„ „	24 and 25, Gladstone Road .....	...	98·40	...	„
„ 9th	45 and 47, Muntz Street .....	...	...	...	very large.
„ „	66 and 67, Wright Street .....	...	249·40	...	excessive
„ „	Back 96, Coventry Street (Scarlet Fever.) ...	...	73·40	...	large
„ 13th	93 and 94, Well Street .....	...	139·60	...	„
„ 14th	23 Court, Osler Street .....	...	79·40	...	moderate
„ 20th	Houses occupied by Mr. Jolly and Mr. Underhill, Rotton Park Road (Scarlet Fever) .....	...	73·60	...	...
„ „	26 and 27 Courts, Bell Barn Road	...	132·40	...	...
„ 22nd	79, Highgate Lane .....	...	98·80	...	moderate
„ „	20, Mole Street .....	...	129·40	...	very large
„ 27th	18, Golden Hillock Road (Diphtheria)	...	126·80	...	...
„ „	35 and 37, Baker Street .....	...	142·40	...	moderate
„ 30th	409 and 410, Monument Road .....	...	156·40	...	very large
„ „	Booth's Buildings, Icknield Port Road (top pump) .....	...	112·20	...	„
„ „	Booth's Buildings, Icknield Port Road (1st pump) .....	...	144·60	...	...
Dec. 4th	15 and 16, Bell Barn Road .....	...	166·80	...	...
„ „	2 Court, Lee Bank Road .....	...	149·00	...	large
„ 7th	124, Gough Road (Scarlet Fever) ...	...	48·40	...	„
„ „	126, Gough Road .....	...	43·40	...	rather large
„ 11th	145 and 146, Lee Bank Road .....	...	108·60	...	„
„ 12th	5 Court, Cope Street .....	...	122·40	...	large
„ „	Thomas' Buildings, Cape Street ...	...	72·80	...	...
„ 13th	41 and 42, Temple Street .....	...	113·80	...	...
„ 18th	32 Court, High Street, Deritend ...	...	290·00	...	very large
„ 20th	11 Court, Lupin Street (Diarrhoea)	...	171·80	...	rather large
„ „	Mount Pleasant, Great Francis Street (Typhoid) .....	...	183·40	...	very large
„ 22nd	265 and 267, Sherlock Street (Fever)	...	182·40	...	„
„ 27th	50 and 52, Dudley Road (Small Pox)	...	142·60	...	...
„ „	205 and 207, Sherlock Street .....	...	204·40	...	...
„ 29th	Bristol Terrace, Bristol Street (Typhoid)	...	212·80	...	very large.

continued.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation. Estimated	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total	
.003	4.18	4.182	41,500	15.1	...	...	...	Clear
.005	4.63	4.634	46,020	11.3	...	...	...	Clear
.003	4.07	4.072	40,400	8.1	...	...	...	Clear
.005	.11	.114	820	3.4	...	...	...	Clear
.003	6.71	6.712	66,800	25.5	...	...	...	Clear
.005	1.10	1.104	10,720	11.0	...	...	...	Clear
.006	4.51	4.515	44,830	12.8	...	...	...	Clear
.005	1.10	1.104	10,720	6.1	...	...	...	Clear
.090	1.98	2.054	20,220	5.4	...	...	...	Clear
.035	6.05	6.079	60,470	12.1	...	...	...	Clear
.003	1.10	1.102	10,700	11.9	...	...	...	Clear
.002	2.64	2.641	26,090	15.3	...	...	...	Clear
.400	6.05	6.380	63,480	12.4	...	...	...	Clear
.004	5.50	5.503	54,710	10.0	...	...	...	Clear
.014	8.03	8.045	80,130	18.5	...	...	...	Clear
.004	4.18	4.183	41,510	7.2	...	...	...	Clear
.140	5.50	5.615	55,830	9.8	...	...	...	Clear
.120	1.21	1.309	12,770	3.8	...	...	...	Clear
.003	6.16	6.162	61,300	13.5	...	...	...	Clear
.005	1.65	1.654	16,220	2.8	...	...	...	Clear
.004	.77	.773	7,410	4.3	...	...	...	Clear
.002	4.84	4.841	48,090	10.4	...	...	...	Clear
.003	3.96	3.962	39,300	19.0	...	...	...	Clear
.016	1.54	1.553	15,210	6.5	...	...	...	Clear
.400	2.20	2.529	24,970	14.2	...	...	...	Very muddy, heavy yellow sediment.
.004	14.74	14.743	147,110	29.2	...	...	...
.005	8.36	8.364	83,320	20.2	...	...	...	Clear
.003	8.91	8.912	88,800	14.5	...	...	...	Clear
.003	4.18	4.182	41,500	21.0	...	...	...	Clear
.450	5.17	5.541	55,090	11.1	...	...	...	Clear
4.000	6.93	10.21	101,780	17.5	...	...	...	Clear
.004	6.05	6.053	60,210	13.0	...	...	...	Clear

TABLE X.

RETURN FOR THE PERIOD 1ST JULY, 1881, TO 30TH JUNE, 1882, RESPECTING THE VACCINATION OF CHILDREN WHOSE BIRTHS WERE REGISTERED IN THE BOROUGH DURING THE SAID PERIOD.

PARISH.	Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns 10, 11, and 13 of the "Vaccination Register" (Birth List Sheets), viz. :					Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of				Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, and 6 of this Return) nor accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
		Col. 10.	Col. 11.		Col. 13.	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached; and Cases not having been found.			
			"Insusceptible of Vaccination."	"Had Small-pox."					"Dead, Unvaccinated."		
1		3	4	5	6	8	9	10	11		
Birmingham ...	9,214	8,187	13	—	845	42	26	91	10		
Aston (within the Borough	5,436	4,446	4	—	505	42	15	347	77		
Edgbaston (")	727	626	—	—	53	15	6	26	1		

Table of the Number of Deaths occurring in each Street in the Borough of
Birmingham during the Year, 1882.

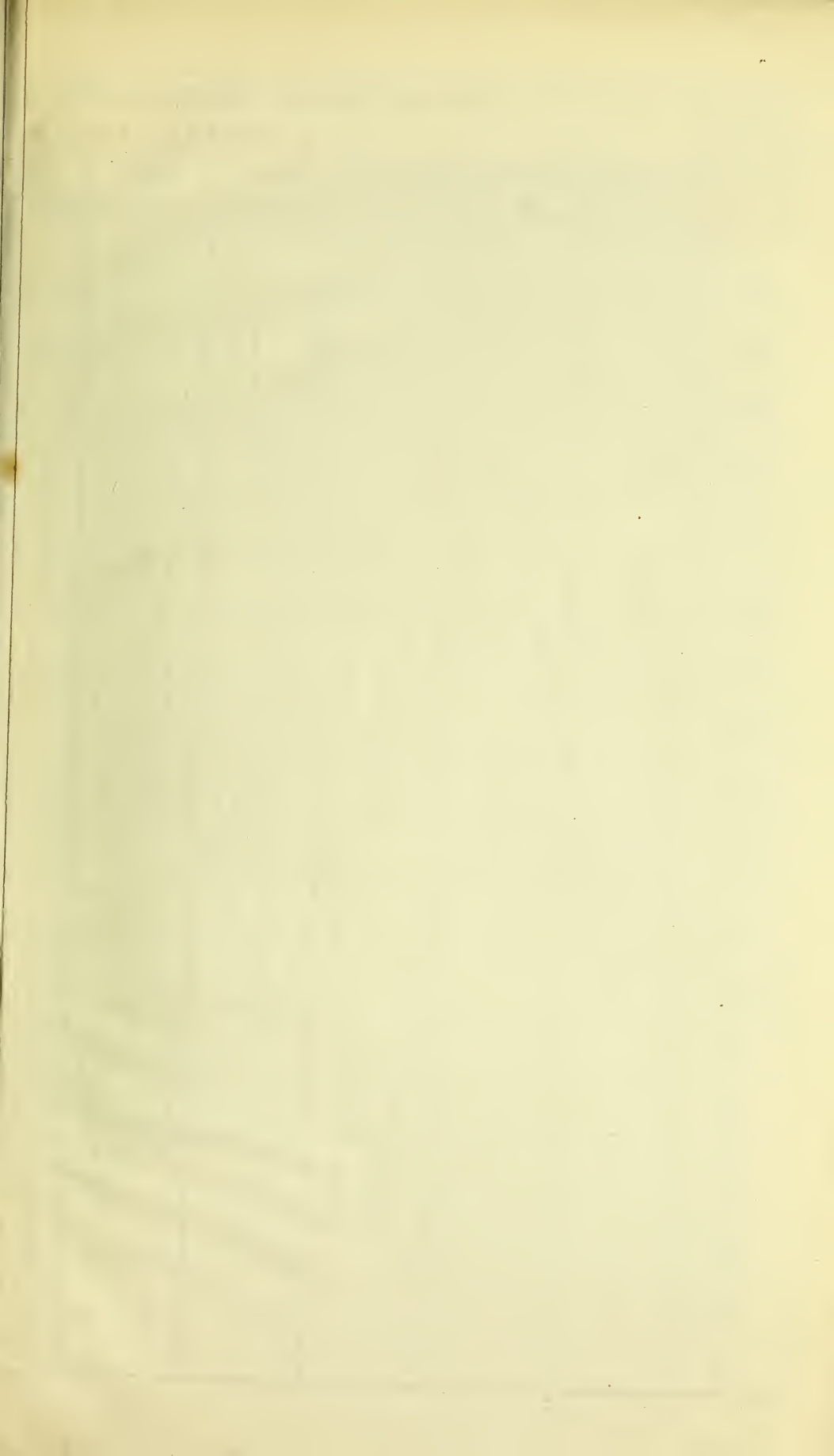
STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
A			Bath Street ...	1	7	Burbury Street ...	4	10
Abberley Street ...		2	Beachfield road ...	1		Burlington Passage ...		1
Abbey Street ...	5	6	Beach Street ...	6	8	Butler Street ...	1	2
Aberdeen Street ...	5	10	Beak Street ...	1	1	Butler Street South ...	1	1
A. B. Row ...	1	1	Bear Lane ...			Butlin Street ...		
Adam Street ...	5	18	Beatrice Crescent ...					
Adderley Street ...	4	10	Beaufort Road ...			C		
Adelaide Street, Deritend ...	3	9	Bedford Road ...	1	2	Calthorpe Road ...		2
Adelaide St., Duddeston ...			Belgrave Road ...		2	Cambridge Crescent ...		
Albert Street, Deritend ...	1	3	Bell Barn Road ...	5	32	Cambridge Street ...		4
Albert Street, All Saints ...		1	Bellis Street ...		1	Camden Drive ...	1	1
Albert St., St. Martin's ...			Bell Street ...			Camden Grove ...		1
Albion Street ...		6	Belmont Passage ...	1	4	Camden Grove ...	7	21
Alcester Street ...	3	18	Belmont Row ...	1	7	Camp Hill ...	2	9
Alexandra Road ...		3	Benacre Street ...	4	24	Camp Street ...		1
Alexandra Street ...	1	7	Bennett's Hill ...			Canal Street ...		1
Alfred Street ...		2	Berkley Street ...		2	Cannon Street ...		
Alcock Street ...	4	10	Berners Street ...		3	Cape Lane ...	1	
Allens Road ...			Beawick Street ...			Cape Street ...	1	1
Allesley Street ...	1	7	Betholom Row ...		3	Cardigan Street ...	3	12
Allison Street ...	2	21	Birchall Street ...		9	Carlisle Road ...		2
All Saints' Road ...	1	5	Bird Lane ...			Carlisle Street ...	1	4
Alma Crescent ...	1	1	Bishopgate Street ...	7	22	Caroline Street ...		3
Alma Street ...			Bishop St., St. Martin's ...	2	14	Carpenter Road ...		3
Alston Street ...	1	13	Bishop Street, St. Mary's ...			Carr's Lane ...		
Ampton Road ...			Bishop Street South ...	1	15	Cartland Road ...	1	5
Anderton Road ...		1	Bissell Street ...			Carver Street ...	5	12
Anderton Street ...	2	6	Blake Lane ...			Castle Street, St. Martin's ...		
Andover Street ...			Blews Street ...		8	Castle Street, Deritend ...		
Angelina Street ...	12	29	Blews Street West ...		5	Cathcart Street ...	2	7
Ann Street ...			Bloomsbury ...	4	5	Cato Street ...		6
Argyle Street ...	1	5	Bloomsbury Street ...		15	Cato Street North ...	2	4
Armoury Road ...			Blucher Street ...	2	9	Cattell Road ...	1	17
Arsenal Street ...		1	Bolton Road ...	3	9	Cattell Grove ...		1
Arthur Road ...			Bolton Street South ...		2	Cecil Street ...	2	20
Arthur Street ...	4	18	Bond Street ...			Centre Row ...	1	1
Ashted Row ...	2	18	Bordesley Green ...	3	7	Chad Road ...		
Aston Brook Street ...			Bordesley Green Road ...	4	22	Chandos Road ...		1
Aston Road ...	5	24	Bordesley Park Road ...	7	17	Chapel House Street ...		1
Aston Street ...	1	6	Bordesley Street ...	2	6	Chapel Street ...		4
Atlas Road ...	1	4	Bow Street ...	2	14	Chapman Road ...		4
Auckland Road ...	2	8	Bracebridge Street ...	2	14	Charles Arthur Street ...	4	10
Asylum Road ...		1	Bradford Street ...	4	30	Charles Henry Street ...	5	27
Augusta Street ...		3	Braithwaite Road ...		2	Charlotte Road ...		2
Augustus Road ...		2	Branston Street ...	1	6	Charlotte Street ...		4
Austin Street ...	1		Brasshouse Passage ...			Chattaway Street ...		4
Avenue Road ...		1	Brass Street ...	3	3	Cheapside ...	14	36
			Bread Lane ...		2	Cheatham Street ...		1
B			Bread Street, St. Paul's ...	1	3	Chequers Walk ...	1	3
Bacchus Road ...		9	Bread St., St. Thomas's ...			Cherry Street ...		
Bagot Street ...	1	12	Brearley Street ...	4	29	Cherry Wood Road ...	1	6
Bailey Street ...		4	Brearley Street West ...	4	14	Chester St., Ladywood ...	5	13
Baker Street ...		3	Brewery St., Deritend ...	2	1	Chester St., Duddeston ...		3
Balloon Street ...			Brewery St., St. Mary's ...			Cheston Road ...		
Balsall Heath Road ...		4	Brewery St., Duddeston ...		1	Christ Church Passage ...		
Balsall Street ...			Brickkiln Street ...			Church Road, Duddeston ...	1	5
Banbury Street ...			Bridge Road ...		1	Church Road, Edgbaston ...		1
Barford Road ...	1	8	Bridge St., All Saints' ...	1		Church Street ...		
Barford Street ...	3	23	Bridge Street St. Thomas ...	7	37	Clarendon Road ...		
Barford Street South ...	5	5	Bridge Street West ...			Clark Street ...	4	12
Barker Street ...	1	3	Bristol Road ...			Claverdon Street ...	2	9
Barlow's Road ...		1	Bristol Street ...	3	16	Claybrook Street ...	1	2
Barn Road ...	7	15	Broad Street ...	2	14	Clement Street ...	2	3
Barrack Street ...			Bromsgrove Street ...	5	16	Cleve Terrace ...		
Barr Street ...	3	14	Brookfield Road ...			Clissold Street ...	2	4
Barr Street West ...	1	10	Brook Road ...			Cliveland Street ...	2	11
Bartholomew Row ...	1	4	Brook Street ...			Coach Yard ...		2
Bartholomew Street ...	2	14	Broom Street ...	1		Cook Street ...	1	5
Barwell Road ...			Brueton's Walk ...			Cooksey Road ...	4	16
Baskerville Passage ...			Buckingham Street ...	4	5	Coleman Street ...	3	15
Baskerville Place ...	1		Buck Street ...			Coleshill Street ...	1	8
Bath Passage ...	4		Bullock Road ...			College Street ...		3
Bath Row ...		10	Bullock Street ...		1	Colmore Row ...		1
			Bull Ring ...		4	Commercial Street ...		
			Bull Street ...		3	Communication Row ...		12

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Constitution Hill ...	1	10	Falconer Road ...	...	...	Green Street, All Saints'	...	2
Conybere Street ...	4	10	Farm Road ...	...	1	Green's Village ...	1	5
Congreve Street ...	...	6	Farm Street ...	15	38	Greenway Street ...	5	12
Cope Street ...	...	8	Fawdry Street ...	...	1	Grindstone Road ...	...	...
Coplow Street ...	...	10	Fazeley Street ...	2	14	Grosvenor Row ...	...	...
Coralie Street ...	...	2	Fisher Street ...	...	4	Grosvenor Street ...	...	1
Corporation Street ...	...	2	Fleet Street ...	2	10	Grosvenor Street West ...	2	14
Cotton Row ...	...	...	Floodgate Street ...	4	7	Guest Street ...	1	2
Cotton Street ...	...	4	Florence Street ...	2	6	Guildford Street ...	...	10
Coventry Road ...	5	25	Fordrough Lane ...	...	1	Gullet, St. Mary's ...	...	...
Coventry Street ...	7	7	Fordrough Street ...	1	10	Gullet, Deritend ...	...	...
Cowper Street ...	...	7	Ford Street ...	2	13	Gullet, St. Thomas's ...	...	...
Cox Street ...	...	3	Forge Street ...	...	3	H	...	...
Coxwell Road ...	2	2	Foster Street ...	...	3	Hagley Road ...	...	11
Crabtree Road ...	2	8	Foundry Road ...	...	2	Halberton Street ...	...	2
Cranemore Street ...	...	3	Fowler Street ...	...	...	Hall Hill Road ...	...	...
Cregoe Street ...	17	...	Fox Street ...	3	3	Hall Street ...	...	5
Crescent ...	...	14	Francis Road ...	...	5	Hampton Street ...	1	14
Crescent Wharf ...	...	...	Francis Street ...	2	17	Hampton Row ...	...	...
Cromwell Street ...	2	36	Frankfort Street ...	7	18	Handsworth New Road ...	...	...
Crooked Lane ...	...	...	Franklin Street ...	...	2	Hanley Street ...	1	10
Cross Street ...	...	...	Frank Street ...	...	2	Hanover Street ...	2	2
Cuckoo Road ...	...	3	Frederick Road ...	...	5	Harborne Road ...	...	6
Cumberland Street ...	...	3	Frederick Street ...	2	...	Harding St. St. George's ...	3	13
Curzon Street ...	...	6	Freeman Road ...	...	6	Harding St., All Saints' ...	1	1
Cuthbert Road ...	...	...	Freeman Street ...	...	2	Harford Street ...	...	2
D	...	...	Freeth Street ...	12	...	Harrison's Road ...	...	1
Dale End ...	1	3	Friston Street ...	1	20	Hatchett Street ...	2	19
Dartmouth Street ...	7	21	G	...	...	Hawkes Street ...	...	5
Dart Street ...	...	4	Galton Street ...	...	2	Heath Mill Lane ...	6	16
Darwin Street ...	2	25	Garbett Street ...	...	19	Heath Street ...	10	28
Dawson Street ...	...	...	Garrison Lane ...	10	32	Heaton Street ...	3	15
Dean Street ...	...	1	Garrison Street ...	1	11	Helena Street ...	...	...
Deanman Road ...	1	5	Gas Street ...	...	4	Heneage Street ...	7	33
Derby Street ...	...	4	Geach Street ...	1	11	Henley Street ...	...	5
Devon Street ...	4	11	Gee Street ...	...	...	Henn Street ...	...	...
Devonshire Street ...	2	15	Gem Street ...	...	8	Henn's Walk ...	...	1
Digbeth ...	3	20	George Road ...	...	1	Henrietta Street ...	...	5
Digby Street ...	1	5	George Street, St. Paul's ...	...	3	Henry Street ...	2	6
Doe Street ...	...	1	George Street, Nechells ...	1	6	Herbert Road ...	4	27
Dolman Street ...	4	10	George Street West ...	2	21	Hickman Road ...	...	1
Dolobran Road ...	...	1	Gibb Street ...	1	3	Hick Square ...	...	...
Drury Lane ...	1	...	Gillott's Road ...	...	1	Hick Street ...	3	7
Duchess Road ...	...	5	Gladstone Road ...	...	3	Highfield Road ...	...	...
Duddeston Mill Road ...	4	8	Glebe Passage ...	...	...	Highgate Lane ...	2	8
Duddeston Row ...	2	8	Glebe Street ...	1	4	Highgate Place ...	...	...
Dudley Road ...	3	14	Gloucester Street ...	...	...	Highgate Street ...	3	15
Dudley Street ...	...	4	Glover's Road ...	...	...	High Park Street ...	...	3
Dugdale Street ...	1	4	Glover's Street ...	2	11	High Street ...	...	4
Duke Street ...	3	8	Godwin Street ...	2	8	High Street, Deritend ...	8	27
Dymoke Street ...	9	10	Golden Hillock Road ...	1	2	Hill Street ...	...	7
E	...	...	Gooch Street ...	3	25	Hinckley Street ...	...	1
Eastern Road ...	...	...	Goode Street ...	1	4	Hingeston Street ...	7	21
Easy Row ...	...	...	Goodrick Street ...	...	3	Hob Moor Lane ...	...	...
Eden Place ...	...	1	Gopsall Street ...	...	5	Hockley Hill ...	1	11
Edgbaston Road ...	...	1	Gosta Green ...	...	...	Hockley Pool Road ...	...	...
Edgbaston Street ...	1	2	Gough Road ...	...	4	Hockley Street ...	...	8
Edmund Street ...	...	3	Gough Street ...	1	10	Holborn Hill ...	1	5
Edward Road ...	...	...	Grace Road ...	...	4	Holland Street ...	1	1
Edward Street ...	3	7	Grafton Road ...	...	3	Holiday Street ...	1	15
Elkington Street ...	...	1	Graham Street ...	2	8	Hollier Street ...	...	3
Ellen Street ...	10	20	Grange Road ...	3	6	Holloway Head ...	3	11
Ellis Street ...	2	6	Granham Road ...	...	2	Holly Road ...	...	...
Elvetham Road ...	...	1	Grant Street ...	...	6	Holt Street ...	1	17
Emily Street ...	3	12	Granville Street ...	2	5	Hooper Street ...	...	2
Emmeline Street ...	...	1	Great Barr Street ...	4	18	Hope St. (St. Martin's) ...	7	28
Enfield Road ...	...	...	Great Brook Street ...	2	29	Hope St., (All Saints') ...	...	...
Engine Street ...	1	2	Great Charles Street ...	...	5	Horse Fair ...	...	...
Erasmus Road ...	2	7	Great Colmore Street ...	1	30	Hospital Street ...	5	28
Ernest Street ...	...	...	Great Francis Street ...	5	33	Howard Place ...	...	...
Ersine Street ...	1	8	Great Hampton Row ...	4	15	Howard Street ...	...	10
Essex Street ...	5	8	Great Hampton Street ...	2	6	Howe Street ...	...	13
Essington Street ...	2	8	Great King Street ...	6	22	Hubert Road ...	...	...
Exeter Row ...	...	3	Great Lister Street ...	2	33	Hubert Street ...	...	1
Eyre Street ...	...	5	Great Queen Street ...	...	...	Humpage Road ...	...	...
Factory Road ...	...	1	Great Russell Street ...	10	35	Hunter's Lane ...	...	...
			Great Tindal Street ...	1	11	Hunter's Vale ...	...	1
			Greenfield Crescent ...	1	1	Hurst Street ...	3	8
			Green Lane ...	3	19	Hutton Street ...	2	2
			Green's Court ...	...	...	Hyde Road ...	...	5
			Green Street, Deritend ...	...	...	Hylton Street ...	...	...

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
I			Lennox Street ...	3	8	Milk Street ...	10	11
Icknield Port Road ...	8	41	Leopold Street ...	6	10	Miller Street ...	1	10
Icknield Square ...	5	22	Lichfield Street ...	1	1	Mill Lane ...	1	1
Icknield Street ...	1	19	Lilly Green ...	6	3	Mill Street, Duddeston ...	2	1
Inge Street ...	1	26	Lingard Street ...	1	3	Mill Street, Ladywood ...		
Ingleby Street ...	4	16	Lionel Street ...	7	9	Milton Street ...	4	4
Inkerman Street ...		10	Lister Street ...	2	5	Millward Street ...	4	5
Irving Street ...	12	37	Little Ann Street ...	1	5	Minories ...		
Islington ...			Little Barr Street ...	2	2	Moat Lane ...		
Islington Row ...		1	Little Bow Street ...	2	2	Moat Row ...		2
Ivy Lane ...	2	3	Little Broom Street ...	1	1	Moillett Street ...		2
			Little Cannon Street ...	1	1	Moland Street ...	4	24
			Little Cherry Street ...	3	3	Mole Street ...		4
			Little Edward Street ...	3	3	Mona Road ...		2
			Little Francis Street ...	5	5	Monmouth Street ...		
			Little Green Lane ...	8	6	Montague Road ...		
			Little Hill Street ...	6	3	Montague Street ...	2	2
			Little King Street ...		4	Montgomery Street ...		4
			Little Shadwell Street ...			Montpellier Street ...		
J			Liverpool Street ...	1	2	Monument Road ...	5	23
Jamaica Row ...			Livery Street ...	1	10	Moore's Row ...		1
James Street ...		1	Lloyd Street ...		1	Moorsom Street ...		1
James Turner Street ...	2	3	Lodge Road ...	10	26	Moor Street ...		11
Jenkins Street ...		1	Lombard Street ...		4	Moreton Street ...		4
Jennens Row ...	2	1	London 'Prentice Street ...	4	30	Morville Street ...	2	14
John Bright Street ...	1	3	Long Acre ...	1	1	Moseley Road ...		2
Johnson Street ...		1	Longmore Street ...	1	11	Moseley Street ...		14
Johnstone Street ...	1	5	Long Street ...	2	9	Mott Street ...		9
John Street ...	1	7	Lord Street ...			Mountfield Road ...		1
			Louisa Street ...	2	1	Mount Pleasant ...		3
			Loveday Street ...	6	2	Mount Street, Deritend ...	1	5
			Love Lane ...	1	4	Mount St., Winslow Green ...		4
			Lower Camden Street ...		1	Mount Street, Nehells ...	1	5
			Lower Dartmouth Street ...	4	1	Musgrave Road ...		2
K			Lower Darwin Street ...			Muntz Street ...	3	7
			Lower Dean Street ...					
			Lower Essex Street ...	2	14			
Keeley Street ...	3	4	Lower Fazeley Street ...	2	6	N		
Kelynge Street ...		8	Lower Henry Street ...	1	9	Navigation Street ...	4	10
Kendal Road ...		3	Lower Hospital Street ...	1	1	Nechells Park Road ...	3	28
Kent Street ...	1	4	Lower Hurst Street ...	2	13	Nechells Place ...		2
Kent Street North ...	1	8	Lower Hurst Street East ...		4	Nedham Street ...		
Kenion Street ...	4	6	Lower King Edward's Rd ...	1	5	Needless Alley ...		
Key Hill ...		8	Lower Lawley Street ...			Nelson Street ...	2	6
King Alfred's Place ...			Lower Loveday Street ...	1	3	Nelson Street South ...	4	21
King Edward's Place ...		2	Lower Pershore Street ...	1	1	Nelson Street West ...	3	14
King Edward's Road ...	13		Lower Priory ...			New Bartholomew St. ...	1	4
Kingston Road ...	1	4	Lower Russell Street ...			New Bond Street ...		3
King Street ...		1	Lowe Street ...		3	New Bridge Street ...		2
Kyott's Lake Road ...			Lower Temple Street ...	5	18	New Canal Street ...		13
Kyrwick's Lane ...	2	5	Lower Tower Street ...			New Church Street ...		
			Lower Trinity Street ...			Newdegate Street ...		1
			Lower Windsor Street ...			New Edmund Street ...		
			Loxton Street ...	2	3	New England ...	3	3
L			Ludgate Hill ...	1	8	New Hall Hill ...	2	15
Ladypool Lane ...	1	2	Ludgate Hill Passage ...			New Hall Street ...		
Ladywell Passage ...			Lupin Street ...	4	9	New Inkleys ...	1	5
Ladywell Walk ...						New John Street ...	7	21
Ladywood Road ...	6	23	M			New John Street West ...	6	50
Ladywood Grove ...		1	Macdonald St., St. Geo. ...	1	8	New Market Street ...	3	
Lancaster Street ...	8	11	Macdonald St., St. Mtn's ...	3	13	New Meeting Street ...	1	1
Lander Street ...			Main Street ...	1	3	New Spring Street ...	6	9
Langley Road ...			Malvern Hill Road ...			New Street ...		2
Lansdowne Street ...		3	Manchester Street ...	1	3	New Summer Street ...	9	21
Larches Street ...	2	10	Manor Road ...			Newton Street ...		3
Latimer Street ...			Market Street ...	2		Newtown Row ...	11	29
Latimer Street South ...	4	11	Mark Lane ...	1		Nile Street ...		
Lawden Road ...		6	Marloway Street ...	2		Nineveh Road ...		
Lawley Street ...		23	Marshall Street ...	2		Noel Road ...		1
Lawrence Street ...	6	12	Marshall Street South ...	3		Norfolk Road ...		2
Lease Lane ...		4	Mary Ann Street ...	2		Norfolk Street ...	1	5
Ledsam Street ...	3	20	Mary Street ...	1	1	Norman Street ...		7
Lee Bank Road ...	2	24	Masshouse Lne, St. Mtns ...	1	1	Northampton Street ...		1
Lee Crescent ...		3	Masshouse Lane, Edgbn ...	1		Northbrook Street ...		6
Lee Mount ...		1	Meeting House Yard ...			Northumberland Street ...	1	6
Leek Street ...		3	Meriden Street ...	5	17	North Warwick Street ...		
Lees Street ...	3	6	Metchley Lane ...		1	Northwood Street ...	2	8
Legge Lane ...	1	3	Metchley Park Road ...			North Street ...		
Legge Street ...	3	12	Miles Street ...	4	18	Norton Street ...		2
Lench Street ...	3	8				Nova Scotia Street ...	1	3
						Nursery Road ...		1

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Temple Street...	...	2	W			Worcester Wharf ...		4
Tenby Street ...	...	3				Wordsworth Road ...		2
Tenby Street North ...	...	9				Wrentham Street ...	3	12
Tennant Street ...	5	20				Wright Street ...	...	9
Theodore Street ...	2	14				Wrottesley Street ...	...	1
Theresa Road ...	...	3				Wyndcliffe Road ...	...	3
Thimble Mill Lane ...	4	8				Wyndham Road ...	...	1
Thomas St., St. Mary's	...	1				Wynn Street ...	1	14
Thomas Street, Deritend	2	4						
Thorp Street ...	1	5				X		
Tillingham Street ...	...	3						
Tindal Street ...	...	8				Y		
Tonk Street ...	...						
Tower Street ...	13	20				Yardley Road ...	...	2
Trafalgar Road ...	...					Yew Tree Road ...	...
Trent Street ...	3	6				York Passage ...	...
Trinity Terrace ...	...					York Road ...	...	4
Turner Street ...	2	5				York Street ...	1	2
Tyndall Street...	5	3				Z		
U								
Unett Street ...	6	27				ADDENDA.		
Union Passage ...	...	1				New Street Station ...	...	1
Union Street ...	...					Winson Green Station ...	...	1
Union Terrace ...	...					Snow Hill Station ...	...	1
Upper Dean Street ...	...	1				London & North Western	...	
Upper Gough Street ...	2	6				Railway ...	...	3
Upper Highgate Street ...	...					Rotton Park Reservoir ...	...	1
Upper Hockley Street ...	...					River Rea ...	...	1
Upper Hospital Street...	2	10				Birmingham & Warwick	...	
Upper Marshall Street...	1					Canal ...	...	1
Upper Mill Lane ...	...					Old Birmingham Canal	...	6
Upper Priory ...	2	1				Birmingham & Fazeley	...	3
Upper Ryland Road ...	1					Canal ...	...
Upper Tower Street ...	...	2				Birmingham & Worcester	...	1
Upper Trinity Street ...	...	8				Canal ...	...	1
Upper Windsor Street...	...					Hay Mill Brook ...	...	1
V						AT INSTITUTIONS		
Vale Street ...	...					General Hospital ...	19	230
Varna Road ...	1	7				Queen's Hospital ...	8	116
Vaughton Street ...	4	8				Children's Hospital ...	22	56
Vaughton Street South	...	1				Workhouse ...	15	507
Vauxhall Grove ...	...	1				Asylum ...	...	62
Vauxhall Road ...	5	11				Gaol ...	...	4
Vauxhall Street ...	2	2				Borough Hospital ...	76	
Vere Street ...	1	8				Homœopathic Hospital	1	11
Viaduct Street...	...	1						
Vicarage Road ...	...	1						
Victoria Grove ...	...	2						
Victoria Street ...	1	4						
Villa Street ...	...	5						
Villiers Street ...	1	2						
Vine Street ...	...	1						
Vittoria Street...	1	5						
Vyse Street ...	...	3						
						TOTALS	1414	7011

Grand Total ... 8,425



1882

DEATH RATE PER
1000 PER ANN. &AV. DEATH
AGE IN YEARSTOTAL DEATH RATE FROM
AVERAGE AGE

JANUARY

FEBRUARY

MARCH

APRIL

MAY

1 2 3 4

5 6 7 8

9 10 11 12

13 14 15 16 17

18 19 20 21 22

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30

29

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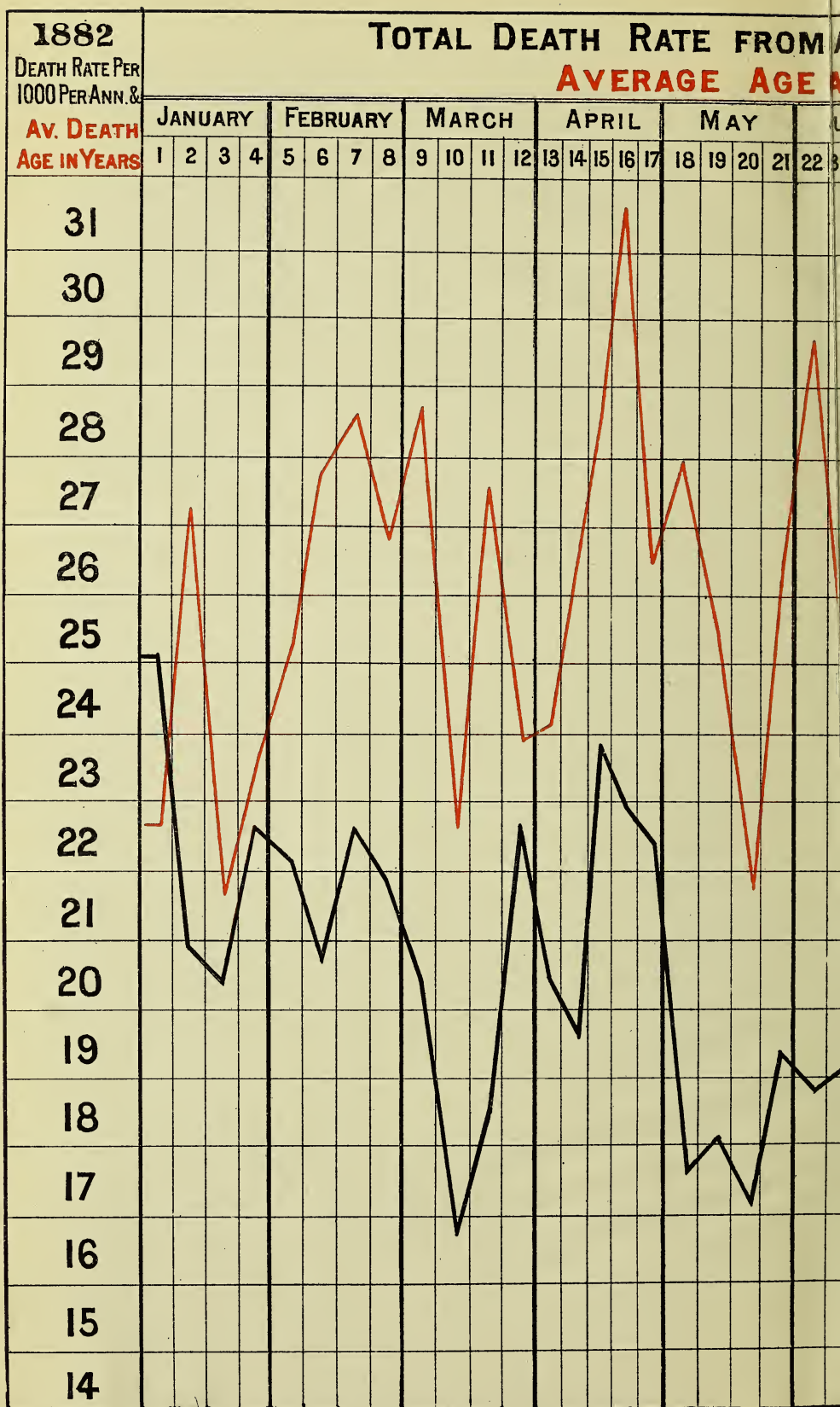
18

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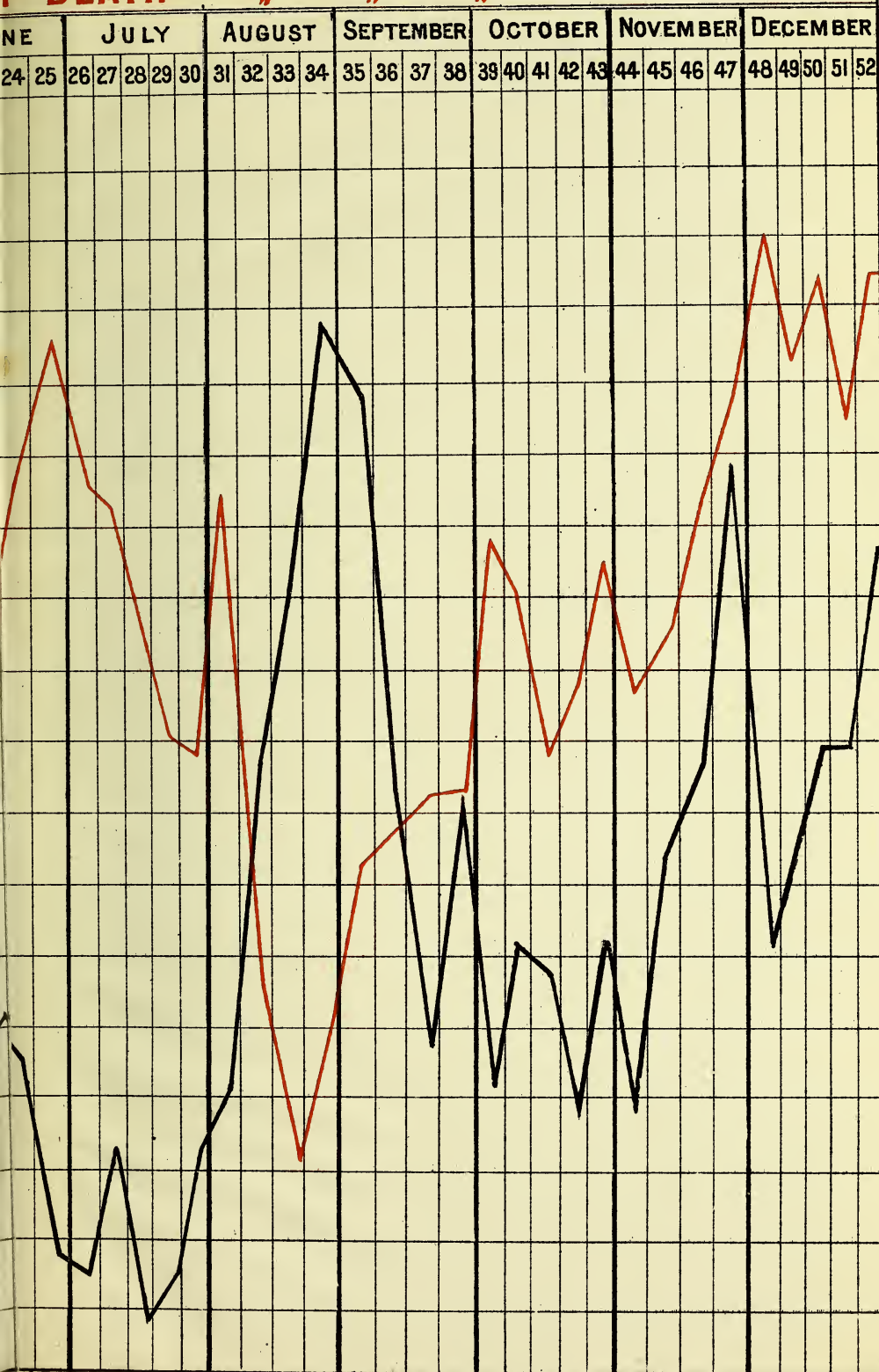
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14



ALL CAUSES SHEWN IN WEEKLY PERIODS THUS —

T DEATH





MAP OF THE BOROUGH OF BIRMINGHAM, AS IN 1880.

NOTE. THE RED SPOTS REPRESENT THE NUMBER OF DEATHS (256) FROM SCARLET FEVER IN 1882.
 " " " " " " " " (150) " MEASLES " " " " " " " " (67) " TYPHOID FEVER " " " " " " " " " " " "



SCALE 20 PACES TO ONE INCH

SCALE OF ONE MILE

YARDLEY.

BOROUGH SURVEYORS OFFICE
BIRMINGHAM

REPORT
ON
ADULTERATION.



BOROUGH ANALYST'S LABORATORY,

THE COUNCIL HOUSE,

April 28th, 1883.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I beg to submit to you my Annual Report on the articles of food and drink, numbering 321, analysed by me during last year under the provisions of the "Sale of Food and Drugs Bill." The appended statement contains particulars respecting each sample :—

NO.	DATE.—1882.	ARTICLES.	REMARKS.	List of Articles Analysed.
1205—	Jan. 23rd	... Coffee	Genuine.	
1206—	" 23rd	... Coffee	Genuine.	
1207—	" 23rd	... Coffee	Genuine.	
1208—	" 23rd	... Coffee	Adulterated with 20·3 % of chicory. Cautioned by Health Sub- Committee.	
1209—	" 23rd	... Coffee	Genuine.	
1210—	" 23rd	... Coffee	Adulterated with 43·2 % of chicory. Fined 30s. and costs.	
1211—	" 24th	... Marmalade	Genuine.	
1212—	Feb. 6th	... Milk	Genuine.	
1213—	" 13th	... Milk	Genuine.	
1214—	" 17th	... Milk	Adulterated with 17½ % of water. Fined 20s. and costs.	
1215—	" 17th	... Milk	Genuine.	
1216—	" 17th	... Milk ..	Adulterated with 7 % water. Cautioned by Health Sub- Committee.	
1217—	" 17th	... Milk	Adulterated with 15 % of water. Fined 20s. and costs.	
1218—	" 17th	... Milk	Genuine (nearly).	
1219—	" 17th	... Milk	Adulterated with 5½ % water. Cautioned by Health Sub- Committee.	
1220—	" 21st	... White Pepper ...	Genuine.	
1221—	" 21st	... Mustard	Genuine.	
1222—	" 21st	... White Pepper ...	Genuine.	
1223—	" 21st	... Mustard	Genuine.	
1224—	" 21st	... White Pepper ...	Genuine.	
1225—	" 21st	... Mustard	Adulterated with 20 % of wheat flour, and coloured with tur- meric.	
1226—	" 21st	... Mustard	Genuine.	
1227—	" 21st	... White Pepper ...	Genuine.	
1228—	" 21st	... Mustard.....	Genuine.	
1229—	" 21st	... White Pepper ...	Genuine.	
1230—	" 25th	... Milk	Adulterated with 30 % of water. Fined 40s. and costs.	

List of Articles Analysed <i>continued.</i>	No.	DATE.—1882.	ARTICLES.	REMARKS.
	1231—	Feb. 25th	... Milk	Genuine.
	1232—	" 25th	... Milk	Genuine.
	1233—	" 25th	... Milk	Adulterated with 6 % of water, and deprived of 54 % of its cream. Fined 20s. and 17s. costs.
	1234—	" 25th	... Milk	Genuine (nearly).
	1235—	" 25th	... Milk	Adulterated with 18 % of water. Fined 20s. and costs.
	1236—	Mar. 2nd	... Milk	Adulterated with 36.2 % of water.
	1236A	" 6th	... Milk	Adulterated with 4½ % of water, and deprived of 25 % of its cream. Fined £10 and costs.
	1237—	" 7th	... Milk	Adulterated with 29 % of water.
	1238—	" 7th	... Milk	Deprived of about 40 % of its cream. Fined 10s. and costs.
	1239—	" 7th	... Milk	Adulterated with 13½ % of water. Fined 20s. and costs.
	1240—	" 7th	... Milk	Genuine.
	1241—	Mar. 7th	... Milk	Genuine.
	1242—	" 17th	... Milk	Adulterated with 10½ % of water. Fined 20s. and costs.
	1243—	" 17th	... Milk	Genuine.
	1244—	" 17th	... Milk	Adulterated with 4 % of water, and deprived of 30 % of its cream. Fined 5s. and costs.
	1245—	" 17th	... Milk	Adulterated with 19 % of water, and deprived of 25 % of its cream. Fined 5s. and costs.
	1246—	" 17th	... Milk	Genuine (nearly).
	1247—	" 17th	... Milk	Genuine.
	1248—	" 17th	... Milk	Adulterated with 20 % of water, and deprived of 25 % of its cream. Fined 5s. and costs.
	1249—	" 17th	... Milk	Adulterated with 4½ % of water.
	1250—	" 22nd	... Mustard	Genuine.
	1251—	" 22nd	... Pepper	Genuine.
	1252—	" 22nd	... Mustard	Genuine.
	1253—	" 22nd	... Pepper	Genuine.
	1254—	" 22nd	... Mustard	Genuine.
	1255—	" 22nd	... Pepper	Genuine.
	1256—	" 22nd	... Mustard	Genuine.
	1257—	" 22nd	... Pepper	Genuine.
	1258—	" 22nd	... Mustard	Genuine.
	1259—	" 22nd	... Pepper	Genuine.
	1260—	" 22nd	... Mustard	Genuine.
	1261—	" 22nd	... Pepper	Genuine.
	1262—	" 22nd	... Milk	Genuine.
	1263—	" 23rd	... Milk	Adulterated with 6½ % of water.
	1264—	" 27th	... Bread.....	Genuine.
	1265—	" 27th	... Bread.....	Genuine.
	1266—	" 27th	... Bread.....	Genuine.
	1267—	" 27th	... Bread.....	Genuine.
	1268—	" 27th	... Bread.....	Genuine.
	1269—	" 27th	... Bread.....	Genuine.
	1270—	" 27th	... Flour.....	Genuine.
	1271—	" 27th	... Flour.....	Genuine.
	1272—	" 27th	... Flour.....	Genuine.
	1273—	" 27th	... Flour.....	Genuine.
	1274—	" 27th	... Flour.....	Genuine.
	1275—	" 27th	... Flour.....	Genuine.
	1276—	Apr. 15th	... Milk	Adulterated with 4½ % of water, and deprived of nearly 20 % of its cream.

No.	DATE.—1882.	ARTICLES.	REMARKS.	List of Articles Analysed <i>continued.</i>
1276A—	Apl. 21st	... Milk	Genuine.	List of Articles Analysed <i>continued.</i>
1277—	" 21st	... Milk.....	Genuine.	
1278—	" 21st	... Milk.....	Genuine.	
1279—	" 21st	... Milk	Genuine.	
1280—	" 21st	... Milk	Genuine.	
1281—	" 21st	... Milk	Genuine.	
1282—	" 26th	... Pepper	Genuine.	
1283—	" 26th	... Mustard	Genuine.	
1284—	" 26th	... Coffee	Genuine.	
1285—	" 26th	... Mustard	Adulterated with 30 % of wheat flour and turmeric.	
1286—	" 26th	... Pepper	Genuine.	
1287—	" 26th	... Coffee	Genuine.	
1288—	" 26th	... Mustard	Genuine.	
1289—	" 26th	... Pepper	Genuine.	
1290—	" 26th	... Coffee	Genuine.	
1291—	" 26th	... Pepper	Genuine.	
1292—	" 26th	... Mustard	Genuine.	
1293—	" 26th	... Coffee	Genuine.	
1294—	May 9th	... Milk	Genuine.	
1295—	" 9th	... Milk	Deprived of 35 % of its cream. Fined 5s. and costs	
1296—	" 9th	... Milk	Adulterated with 17½ % water.	
1297—	" 9th	... Milk	Genuine.	
1298—	" 9th	... Milk	Adulterated with 16 % water. Fined 5s. and costs.	
1299—	" 9th	... Milk	Deprived of 40 % of its cream. Fined 5s. and costs	
1300—	" 13th	... Milk	Genuine.	
1301—	" 13th	... Milk	Genuine.	
1302—	" 13th	... Milk	Deprived of 35 % of its cream.	
1303—	" 13th	... Milk	Genuine.	
1304—	" 13th	... Milk	Genuine.	
1305—	" 13th	... Milk	Genuine.	
1306—	" 13th	... Milk	Genuine.	
1307—	" 22nd	... Beer	Genuine.	
1308—	" 22nd	... Beer	Genuine.	
1309—	" 22nd	... Beer	Genuine.	
1310—	" 22nd	... Beer	Genuine.	
1311—	" 22nd	... Beer	Genuine.	
1312—	" 22nd	... Beer	Genuine.	
1313—	" 26th	... Milk	Unhealthy cow.	
1314—	" 26th	... Milk	Unhealthy cow	
1315—	" 27th	... Milk	Genuine, but offensive in odour.	
1316—	" 27th	... Cream	Genuine.	
1317—	June 8th	... Milk	Deprived of 20 % of its cream. Fined 5/- and costs.	
1318—	" 8th	... Milk	Genuine.	
1319—	" 8th	... Milk	Genuine.	
1320—	" 8th	... Milk	Genuine.	
1321—	" 8th	... Milk	Genuine.	
1322—	" 8th	... Milk	Deprived of 30 % of its cream.	
1323—	" 9th	... Coffee	Adulterated with 48 % Chicory. Cautioned by Sub-Committee.	
1324—	" 9th	... Mustard	Genuine.	
1325—	" 9th	... Coffee	Genuine.	
1326—	" 9th	... Mustard	Genuine.	
1327—	" 9th	... Coffee	Adulterated with 69½ % Chicory. Cautioned by Sub-Committee.	
1328—	" 9th	... Mustard	Genuine.	
1329—	" 9th	... Mustard	Genuine.	
1330—	" 9th	... Coffee	Genuine.	
1331—	" 9th	... Coffee	Genuine.	

List of Articles Analysed <i>continued.</i>	No.	DATE.—1882.	ARTICLES.	REMARKS.
	1332—	June 9th	... Mustard	Genuine.
	1333—	" 9th	... Coffee	Adulterated with 56 % of Chicory. Cautioned by Sub-Committee.
	1334—	" 9th	... Mustard	Genuine.
	1335—	" 9th	... Coffee	Genuine.
	1336—	" 9th	... Mustard	Genuine.
	1337—	" 9th	... Coffee	Genuine.
	1338—	" 9th	... Coffee	Genuine.
	1339—	" 9th	... Mustard	Genuine.
	1340—	" 9th	... Coffee	Genuine.
	1341—	" 9th	... Mustard	Genuine.
	1342—	" 9th	... Coffee	Adulterated with 64·8 % Chicory. Cautioned by Sub-Committee.
	1343—	" 9th	... Mustard	Genuine.
	1344—	" 9th	... Mustard	Genuine.
	1345—	" 9th	... Coffee	Adulterated with 53·5 % Chicory. Cautioned by Sub-Committee.
	1346—	" 9th	... Mustard	Genuine.
	1347—	" 9th	... Coffee	Adulterated with 65·2 % Chicory. Cautioned by Sub-Committee.
	1348—	July 7th	... Milk	Genuine.
	1349—	" 7th	... Milk	Genuine.
	1350—	" 7th	... Milk	Genuine (nearly).
	1351—	" 7th	... Milk	Genuine.
	1352—	" 24th	... Milk	Deprived of 20 % of its cream. Fined 5s. and costs.
	1353—	" 24th	... Milk	Genuine (nearly).
	1354—	" 24th	... Milk	Genuine (nearly).
	1355—	" 24th	... Milk	Genuine (nearly).
	1356—	" 24th	... Milk	Genuine.
	1357—	" 24th	... Milk	Genuine.
	1358—	" 24th	... Milk	Genuine.
	1358—	" 28th	... Butter	Consisted of foreign fat
	1359—	" 28th	... Butter	Genuine.
	1360—	" 28th	... Butter	Genuine.
	1360—	" 28th	... Butter	Genuine.
	1350A—	" 28th	... Cheese	Genuine.
	1361—	Aug. 22nd	... Milk	Genuine (nearly).
	1362—	" 22nd	... Milk	Deprived of 20 % of its cream. Fined 10s. and costs.
	1363—	" 22nd	... Milk	Genuine.
	1364—	" 22nd	... Milk	Adulterated with 5½ % water.
	1365—	" 22nd	... Milk	Genuine.
	1366—	" 23rd	... Flour.....	Genuine.
	1367—	" 23rd	... Flour.....	Genuine.
	1368—	" 23rd	... Flour.....	Genuine.
	1369—	" 23rd	... Flour.....	Genuine.
	1370—	" 23rd	... Flour.....	Genuine.
	1371—	" 23rd	... Flour.....	Genuine.
	1372—	" 23rd	... Flour.....	Genuine.
	1373—	" 23rd	... Flour.....	Genuine.
	1374—	" 23rd	... Flour.....	Genuine.
	1375—	" 23rd	... Flour.....	Genuine.
	1376—	" 23rd	... Flour.....	Genuine.
	1377—	" 23rd	... Flour.....	Genuine.
	1378—	" 25th	... Milk	Genuine.
	1379—	" 25th	... Milk	Genuine.
	1380—	" 25th	... Milk	Genuine.
	1381—	" 25th	... Milk	Genuine.
	1382—	" 25th	... Milk	Genuine.
	1383—	" 25th	... Milk	Deprived of 20 % of its cream. Fined 10s. and costs.
	1384—	Sept. 1st	... Mustard	Genuine.

No.	DATE.—1882.	ARTICLES.	REMARKS.	List of Articles Analysed <i>continued.</i>
1385—	Sept. 1st	... Mustard	Genuine.	
1386—	" 1st	... Mustard	Genuine.	
1387—	" 1st	... Mustard	Genuine.	
1388—	" 1st	... Mustard	Genuine.	
1389—	" 1st	... Mustard	Genuine.	
1390—	" 1st	... Mustard	Genuine.	
1391—	" 1st	... Mustard	Genuine.	
1392—	" 1st	... Mustard	Genuine.	
1393—	" 1st	... Mustard	Genuine.	
1394—	" 1st	... Mustard	Genuine.	
1395—	" 1st	... Mustard	Genuine.	
1396—	" 5th	... Milk	Genuine.	
1397—	" 5th	... Milk	Genuine.	
1398—	" 5th	... Milk	Genuine.	
1399—	" 5th	... Milk	Genuine.	
1400—	" 5th	... Milk	Genuine.	
1401—	" 5th	... Milk	Adulterated with 14 % water. Paid costs, 5s.	
1402—	" 7th	... White Pepper ...	Genuine.	
1403—	" 7th	... White Pepper ...	Genuine.	
1404—	" 7th	... White Pepper ...	Genuine.	
1405—	" 7th	... White Pepper ...	Genuine.	
1406—	" 7th	... White Pepper ...	Genuine.	
1407—	" 7th	... White Pepper ...	Genuine.	
1408—	" 7th	... White Pepper ...	Genuine.	
1409—	" 7th	... White Pepper ...	Genuine.	
1410—	" 7th	... White Pepper ...	Genuine.	
1411—	" 7th	... White Pepper ...	Genuine.	
1412—	" 7th	... White Pepper ...	Genuine.	
1413—	" 7th	... White Pepper ...	Genuine.	
1414—	" 11th	... Mustard	Genuine.	
1415—	" 11th	... Mustard	Genuine.	
1416—	" 11th	... Mustard	Genuine.	
1417—	" 11th	... Mustard	Genuine.	
1418—	" 11th	... Mustard	Genuine.	
1419—	" 11th	... Mustard	Genuine.	
1420—	" 15th	... Milk	Genuine.	
1421—	" 15th	... Milk	Genuine.	
1422—	" 15th	... Milk	Deprived of 15 % of its cream. Cautioned by Sub-Committee.	
1423—	" 15th	... Milk	Genuine.	
1424—	" 30th	... Mustard	Genuine.	
1425—	" 30th	... Coffee	Genuine.	
1426—	" 30th	... Coffee	Genuine.	
1427—	" 30th	... Mustard	Genuine.	
1428—	" 30th	... Coffee	Genuine.	
1429—	" 30th	... Coffee	Adulterated with 48 % of chicory.	
1430—	" 30th	... Mustard	Genuine.	
1431—	" 30th	... Coffee	Genuine.	
1432—	" 30th	... Mustard	Genuine.	
1433—	" 30th	... Mustard	Adulterated with 20 % of wheat flour and turmeric.	
1434—	" 30th	... Coffee	Genuine.	
1435—	" 30th	... Mustard	Genuine.	
1436—	" 30th	... Coffee	Adulterated with 18 % chicory.	
1437—	" 30th	... Mustard	Genuine.	
1438—	" 30th	... Mustard	Adulterated with 70 % of wheat flour and turmeric.	
1439—	" 30th	... Coffee	Adulterated with 58 of chicory.	
1440—	" 30th	... Coffee	Genuine.	
1441—	" 30th	... Mustard	Adulterated with 10 % of wheat flour and turmeric.	
1442—	" 30th	... Coffee	Genuine.	

List of Articles Analysed <i>continued.</i>	No.	DATE.—1882.	ARTICLES.	REMARKS.
	1443—	Sept. 30th	... Mustard	Genuine.
	1444—	" 30th	... Coffee	Genuine.
	1445—	" 30th	... Mustard	
	1446—	" 30th	... Coffee	Genuine.
	1447—	" 30th	... Mustard	
	1448—	Oct. 11th	... Coffee	Adulterated with 28 % of chicory. Cautioned by Health Sub- Committee.
	1449—	" 11th	... Coffee	Labelled a Mixture.
	1450—	" 11th	... Coffee	Genuine.
	1451—	" 11th	... Mustard	Genuine.
	1452—	" 11th	... Coffee	Labelled a Mixture.
	1453—	" 11th	... Mustard	Genuine.
	1454—	" 11th	... Coffee	Genuine.
	1455—	" 11th	... Coffee	Genuine.
	1456—	" 11th	... Mustard	Genuine.
	1457—	" 11th	... Coffee	Labelled a Mixture.
	1458—	" 11th	... Mustard	Genuine.
	1459—	" 11th	... Coffee	
	1460—	" 11th	... Mustard	Genuine.
	1461—	" 11th	... Sugar Confectionery	Genuine.
	1462—	" 25th	... Milk	Adulterated with 27 % of Water. Fined £10 and costs.
	1463—	" 25th	... Milk	Genuine.
	1464—	" 26th	... Milk	Adulterated with 17 % of water. Fined 5s and costs.
	1465—	" 26th	... Milk	Genuine.
	1466—	" 26th	... Milk	Genuine (nearly)
	1467—	" 26th	... Milk	Adulterated with 8½ % of water, and deprived of about 15 % of its cream. Fined 1s. and costs.
	1468—	Nov. 9th	... Tea (mixed) ...	Genuine.
	1469—	" 9th	... Tea (mixed) ...	Genuine.
	1470—	" 9th	... Tea (mixed) ...	Genuine.
	1471—	" 9th	... Tea (mixed) ...	Genuine.
	1472—	" 9th	... Tea (black) ...	Genuine.
	1473—	" 9th	... Tea (mixed) ...	Genuine.
	1474—	" 9th	... Tea (mixed) ...	Genuine.
	1475—	" 9th	... Tea (mixed) ...	Genuine.
	1476—	" 9th	... Tea (mixed) ...	Genuine.
	1477—	" 9th	... Tea (mixed) ...	Genuine.
	1478—	" 9th	... Tea (mixed) ...	Genuine.
	1479—	" 9th	... Tea (black)	Genuine.
	1480—	" 21st	... Mustard	Genuine.
	1481—	" 21st	... Pepper (white) ...	Genuine.
	1482—	" 21st	... Mustard	Genuine.
	1483—	" 21st	... Pepper (white)...	Genuine.
	1484—	" 21st	... Pepper (white) ...	Genuine.
	1485—	" 21st	... Mustard	Genuine.
	1486—	" 21st	... Pepper (mixed) ...	Genuine.
	1487—	" 21st	... Mustard	Genuine.
	1488—	" 21st	... Mustard	Genuine.
	1489—	" 21st	... Pepper (mixed) ...	Genuine.
	1490—	" 21st	... Pepper (mixed) ...	Genuine.
	1491—	" 21st	... Mustard	Genuine.
	1492—	" 21st	... Pepper (white)...	Genuine.
	1493—	" 21st	... Mustard	Genuine.
	1494—	" 21st	... Pepper (mixed) ...	Genuine.
	1495—	" 21st	... Mustard	Genuine.
	1496—	" 21st	... Pepper (white) ...	Genuine.
	1497—	" 21st	... Mustard	Genuine.

No.	DATE.—1882.	ARTICLES.	REMARKS.	List of Articles Analysed <i>continued.</i>
1498—	Nov. 21st	... Pepper (mixed, } much black)	Genuine.	
1499—	" 21st	... Mustard	Genuine.	
1500—	" 21st	... Mustard	Adulterated with about 25 % of starch and turmeric.	
1501—	" 21st	... Pepper (mixed)	Genuine.	
1502—	" 21st	... Pepper (white)	Genuine.	
1503—	" 21st	... Mustard	Genuine.	
1504—	" 21st	... Pepper (mixed)	Genuine.	
1505—	" 21st	... Mustard	Genuine.	
1506—	Nov. 25th	... Flour.....	Genuine.	
1507—	" 25th	... Flour.....	Genuine.	
1508—	" 25th	... Flour	Genuine.	
1509—	" 25th	... Flour.....	Genuine.	
1510—	" 25th	... Flour.....	Genuine.	
1511—	" 25th	... Flour.....	Genuine.	
1512—	" 25th	... Flour.....	Genuine.	
1513—	" 25th	... Flour.....	Genuine.	
1514—	" 25th	... Flour.....	Genuine.	
1515—	" 25th	... Flour.....	Genuine.	
1516—	" 25th	... Flour.....	Genuine.	
1517—	" 25th	... Flour.....	Genuine.	
1518—	" 30th	... Milk	Genuine.	
1519—	" 30th	... Milk	Genuine.	
1520—	" 30th	... Milk	Genuine.	
1521—	" 30th	... Milk	Genuine.	
1521A—	Dec. 21st	... Milk	Deprived of 30 % of its cream.	

The articles analysed comprise—

101 Samples of Milk.		
75	"	Mustard.
43	"	Coffee.
40	"	Pepper.
30	"	Flour.
12	"	Tea.
6	"	Ale.
6	"	Bread.
4	"	Butter.
1	"	Cheese.
1	"	Cream.
1	"	Marmalade.
1	"	Sugar Confectionery.

Total ... 321 Samples.

The following Table gives the number of samples analysed and the percentages of adulteration in each year since 1872:—

Percentage of
Adulteration
since 1873.

PROPORTION OF ADULTERATED ARTICLES PER 100 SAMPLES
ANALYSED OF THE FOLLOWING COMMODITIES:—

Years.	Number of Samples Analy-sed.	Total Per-centage of Adul-teration	Percentage of Adulteration of undermentioned Articles.								
			Milk	Bread and Flour.	Butter.	Gro-ceries.	Wines.	Beer.	Spirits.	Drugs.	Other Articles
1873	87	65	75	0	0	87	—	—	—	100	100
1874	79	42	67	0	66	16	—	0	100	—	—
1875	73	38	55	0	—	36	100	—	—	25	—
1876	92	33	30	—	—	19	—	33	25	36	62
1877	176	40	58	0	—	12	—	21	36	26	31
1878	158	21	57	0	0	10	0	13	26	—	—
1879	168	25	60	0	0	5	—	16	—	—	0
1880	178	21	46	0	0	0	—	0	—	—	0
1881	197	23	54	0	36	8	—	0	50	0	0
1882	321	18	36	0	25	10	—	0	—	—	0

Fifty-eight of the samples purchased, or 18 per cent. were found to be more or less adulterated; it is gratifying, however, to find that during the past ten years the proportion of genuine articles continues to increase, being this year 82 per cent., against only 35 per cent. in 1873, and greater than in any other year of the decade.

Milk.

The percentage of adulteration in Milk continues to decline, and now stands at 36 per cent., or less than half what it was in 1873, when it was 75 per cent. Of the 101 samples bought during 1882, 36 had been tampered with, either by the addition of water, or the abstraction of cream, or by a combination of both methods of falsification.

Birmingham has had, for a long time, the unenviable distinction of exceeding all the large towns in the extent of its milk adulteration; it is, therefore, all the more satisfactory to find an improvement in this direction. During the last ten years the amount of adulteration has never been so low as in 1882, except in the year 1876. The immense importance of milk as an article of diet, for children and invalids especially, renders it imperative on the authorities to make every effort to secure its purity.

Mustard.

Of the 75 Mustards, six proved on analysis to contain an admixture of wheaten flour and turmeric, while 15 or 43 per cent. of the Coffees contained large quantities of chicory; in

Coffee.

several instances the vendors of the latter article had protected themselves by labelling the article a "Mixture."

One of the Butters examined was such only in name, and ^{Butter.} consisted entirely of Butterine, though sold as Butter. The other samples were quite genuine.

The Teas all proved to be genuine, indeed so careful a ^{Tea.} supervision of the article at the ports of entry is exercised by the Government that it is difficult to obtain adulterated samples from the retail dealer.

All the six samples of Ale were free from adulteration. ^{Ale.}

Bread and Flour also held, as usual, a distinguished place ^{Bread and Flour.} among the other articles of food. It is a fact, as gratifying as remarkable, that I have not met with an adulterated sample of either the one or the other during the last ten years. The pleasure of recording it is enhanced, when it is considered how important is the quality of the most universal of all foods in reference to the well-being of the great mass of the people, constituting for them, as it actually does, the staple of their daily food, and indeed the veritable "staff of life." If it be possible to carry on so extended a business as that of a Baker or a Miller at once honestly and profitably, it is difficult to see any reason why the Milkman or any other purveyor of food should not transact his business on the same lines.

The single samples of Cheese, Cream, Marmalade, and Sugar Confectionery were all genuine.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D., F.I.C.,
Borough Analyst.

Wellcome Library



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